



ANNUAL REPORT
UPON THE
HEALTHINESS OF THE
CITIZENS,
AND UPON THE
SANITARY CONDITION
OF THE
CITY OF NORWICH,
FOR THE YEAR
1906.

BY
H. COOPER PATTIN,

DOCTOR IN MEDICINE, MASTER OF ARTS, BACHELOR IN SURGERY,
AND A DIPLOMATE IN PUBLIC HEALTH OF THE UNIVERSITY OF CAMBRIDGE,
AUTHOR OF THE "RITUAL OF TEMPERANCE AND STATE HYGIENE,"
PHYSICIAN TO THE CORPORATION HOSPITALS FOR INFECTIOUS DISEASES,
AND
MEDICAL OFFICER OF HEALTH.

NORWICH:

East of England Printing Works, Ltd., 7, St. Giles' Street.

*With the Compliments of the Medical
Officer of Health.*

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CITY OF NORWICH.

HEALTH COMMITTEE.

Mayor :

MR. ALDERMAN HOWLETT.

Chairman :

MR. ALDERMAN MORSE, J.P.

Vice-Chairman :

MR. COUNCILLOR CROTCH.

Members :

MR. COUNCILLOR	BOYCE	MR. COUNCILLOR	HOLMES
„	CREASY	„	HOTBLACK
„	DAY	„	MATTHEWS
„	DUNNETT	„	MURRELL
„	HAVERS	„	PARISH
„	LT.-COL. HARVEY,	„	RUDD
	D.S.O.	„	SHORTEN

ISOLATION HOSPITAL.

Sub-Committee :

THE CHAIRMAN, VICE-CHAIRMAN,

MESSRS. CREASY, DAY, DUNNETT, HAVERS, HOLMES, HOTBLACK,
MATTHEWS AND MURRELL.

Matron : MISS WATKINSON.

PREFACE.

TO THE CHAIRMAN AND MEMBERS OF THE NORWICH
URBAN SANITARY AUTHORITY.

GENTLEMEN,

By a General Order of the Local Government Board, dated 23rd March, 1891, it is prescribed that every Medical Officer of Health shall :—

Make an Annual Report to the Sanitary Authority up to the end of December in each year, comprising a summary of the action taken, or which he has advised the Sanitary Authority to take, during the year for preventing the spread of disease, and an account of the sanitary state of his district generally at the end of the year.

“ The Report shall also contain an account of the enquiries which he has made as to the conditions injurious to health existing in the district, and of the proceedings in which he has taken part, or advised under any statute, so far as such proceedings relate to these conditions.

“ Also an account of the supervision exercised by him, or on his advice, for sanitary purposes over places and houses that the Sanitary Authority have power to regulate, with the nature and results of any proceedings which may have been so required and taken in respect of the same during the year.

“ The Report shall also record the action taken by him, or on his advice, during the year in regard to offensive trades, to dairies, cow-sheds, and milk shops, and to factories and workshops.

“ The Report shall also contain tabular statements of the sickness and mortality within the district, classified according to diseases and localities.

This Report is made in fulfilment of the above regulations.

The *birth-rate* for the year, 26.2 per 1000. is again lower than that for the preceding year (27.5), and also below the averaged birth-rate for the 76 great towns (27.8), which rate again is lower than that for 1905, viz., 28.1 per 1000. This persistent lessening of the birth-rate is a factor which cannot safely be ignored in estimating our communal and even racial prospects. There were 27 more of male than of female children born; in 1905 there were 109. There were 125 births of illegitimate children registered, 37 less than in 1905, and the infantile death-rate of these illegitimate, as usual, was much higher than that of the legitimate children, the proportions being 344 and 172.5 per 1000 births respectively.

The *gross recorded death-rate*, 17.6 per 1000, is higher than that for the 76 great towns considered together, viz., 15.9 per 1000. (The deaths of 47 non-residents are included.) The *corrected death-rate* is 16.0 per 1000. In 1905 our gross death-rate was 16.4, and that for the 76 great towns 15.7 per 1000. The average Norwich death-rate for the preceding five years has been 17.0 per 1000.

The *zymotic death-rate* for the year is 2.9 per 1000. In 1905 it was 1.5. The corresponding rates for the 76 great towns are 2.0 and 1.8 per 1000 respectively. The heightening of the rate is due to the exceptional number of deaths from Measles (99), Whooping Cough (20), and to 166 deaths from Diarrhœa. The rise in the Norwich rate being 1.4 per 1000, and in the 76 great towns 0.5.

The *infantile mortality rate*, 172.5 per 1000 births, constitutes a very unsatisfactory feature in our report for the year. The corresponding (averaged) rate in the 76 great towns is 145.75 per 1000 births. In 1905 these rates were 174 and 139 respectively; so that whilst there has been a fall in the Norwich rate of 1.5 per

1000 births, in the 76 great towns (averaged) there has been a rise of 6.75 per 1000 births. Our figures represent an infantile mortality rate which merits unflagging consideration. I cannot state here all the factors which, in my judgment, contribute to this disquieting death-rate. Some of them are flagrantly obvious, e.g., Zymotic diseases, inclusive of diarrhœal ailments, account for 151, or nearly *one-third* of the total number of deaths of children under one year of age. The diseases classified by the Local Government Board as "Wasting Diseases" (a special table gives the deaths classified in accordance with the Local Government Board tables) (165) also account for nearly *one-third*. Premature births, of which 67 were registered, are classified under the heading "Wasting Diseases." Tuberculous diseases account for 37 of the deaths, "Convulsions" for 53, Respiratory diseases for 82, and "Debility, Atrophy, and Marasmus" (wasting diseases) for 86. As in previous years, I am concerned at the number of deaths attributed to "Premature Birth" and to "Debility," because these suggest, and strongly, *pre-natal* conditions of an unfavourable character. An appreciable number of the parents are of feeble constitution, some are underfed, and some of the mothers induce in themselves undesirable conditions of debility, e.g., by working during the later stages of pregnancy, and, in some instances, by bearing children too rapidly. It is necessary to go on calling attention to these considerations, because well-meaning, but irreflective philanthropists appear so pertinaciously to assume that infantile mortality is due almost entirely to the improper feeding of the infants. It clearly is traceable also to such causes as those mentioned. Bearing always in mind Burke's definition of the community, viz., "a partnership not only between those who are living, but between those who are living and those who are dead, and those who are to be born," we cannot profitably confine our attention to results in dealing with infantile mortality, but must endeavour rightly to estimate the relative significance of the antecedents to death, and in this respect *pre-natal* conditions become highly important. To give the infantile mortality figures in fuller detail, in the first quarter of the year (January to March) these amounted to 130 deaths per 1000 births, the average of the 76 great towns being 128 per 1000 births; for the second quarter (April to June), 142 per

1000 births, the average of the great towns being 108 per 1000 births; for the third quarter (July to September), 265 per 1000 births, the average of the great towns being 209 per 1000 births; and in the last quarter (October to December), 153 per 1000 births, the average in the great towns being 138 per 1000 births. Taking the worst quarter, the third, out of 206 deaths registered and classified in accordance with the Local Government Board table, 123 were due to "Diarrhœal Diseases," 27 to "Wasting Diseases" (made up of 5 Premature Births, 1 death due to Congenital Defect, and 21 to Debility, Atrophy, and Marasmus), 11 to Measles, 3 to Whooping Cough, 1 to Diphtheria, 1 to Chicken-pox, 7 to Tuberculous diseases, 12 to Convulsions, 4 to Respiratory diseases, 3 to Meningitis, 1 to Syphilis, 1 to Erysipelas, and 10 to "other causes." Of the 123 deaths due to Diarrhœal diseases, 109 were certified to be due to Diarrhœa, 5 to Enteritis, and 9 to Gastritis and Gastro-Intestinal Catarrh. I give these particulars because they show clearly that, apart from the specific zymotic ailment (Summer Diarrhœa) associated with the hot season, nearly one-half of the mortality has no special association with the weather; and because I think they indicate very clearly the lines upon which preventive measures must be projected; and these put summarily amount to education of the mothers as to the proper feeding and treatment of themselves before and after childbirth, and in the feeding of their infants, more particularly if this cannot be done from the breast; the principles and, what is more important, the practice of household cleanliness, in the hygienic treatment of food, and particularly of milk. (I think, too, that in the hot weather more copious flushing of the public drains is needed.) I am by no means despondent about the practicability of getting improvements effected by the existing generation of housewives and mothers, by means of visits from women inspectors and health visitors, but with this we want to succeed in altering the racial attitude toward the obligations of maternity (and of paternity), and substitute for a disinclination to take trouble, a consciousness that the right up-bringing of a child is a racial trust committed to the care of the parents, and that to discharge this trust with an unflagging fidelity is as patriotic a service as can be rendered to the State.

The conditions under which females are permitted to begin work in factories constitute, indirectly, a factor tending to the production of a relatively high infantile mortality. Girls now, provided that they pass a certain "standard," are exempted from farther attendance at school, and at fourteen years of age are permitted to become "factory hands." In the course of a decade a number of these girls marry, and having received no training in domestic hygiene, many of them form, and almost necessarily, very poor household managers, and incompetent mothers, with results that swell the infantile mortality rates. The remedy is to be found, in my judgment, in only permitting a girl to work as a half-timer after she has passed the educational standard, and requiring her to produce evidence of having received systematic instruction, for a period of two years, in domestic hygiene, cookery, etc., and in gymnastics, before she can become a whole-timer. The ill-effects upon infant life of permitting pregnant women to work when nearing confinement, or within three months after it, are too well known to need comment.

Miss Hatton and Miss Steven, our female sanitary inspectors and health visitors, have been very assiduous and energetic in visiting houses in which there are young children, conferring with mothers, and in giving instructions as to the feeding of children, etc. During the year they visited 5,659 houses, and made 4,069 re-visits; they found in these houses 2,928 sick persons, reported 142 sanitary defects, made 123 recommendations to cleanse, and found 766 of the householders either out of work, or only partially employed. They inspected 4,252 infants (i.e., children under 1 year of age at the time), and found 1,423 of them ailing; they paid to these 3,676 re-visits. At the time of the visit 1,984 infants were being fed from the breast, 884 partly from the breast and partly with sop by spoon, 162 being fed on sop only, 799 being fed with *long tube* feeding bottles, and 314 with short. They found 2,307 of the mothers healthy, 647 healthy but not strong, 140 very delicate, 113 badly nourished, and 551 who either went out to work, or took in work at home. On their recommendation, dried milk powder was supplied during the year to 72 infants of necessitous mothers, with, on the

whole, satisfactory results. If births had to be registered within 48 hours of their occurrence, the work done by these lady inspectors would be made more effective. As matters stand now a child often has been born for weeks, and sometimes actually is dead before we hear of its existence. By my express direction, these health visitors endeavour to impress upon mothers the vital importance of feeding the child, whenever possible, from the breast; and in all cases inculcate scrupulous carefulness in protecting from contamination the domestic supply of milk. (In my judgment this latter aim will be furthered most effectually by a statutory regulation requiring all milk supplied for domestic use to be sold only in bottles or other sealable vessels.) They also visit and report on homes and workrooms of female out-workers.

Among the influences affecting detrimentally the health of the people, and particularly that of young children and of mothers both prior and subsequent to giving birth to infants (because these naturally have to spend a considerable part of their lives in and about the home), are damp, ill-ventilated, and especially relatively sunless houses; if these, in addition, be crowded internally and cramped for air space, the lowering influence of these conditions upon the general standard of healthiness of the inhabitants is greatly augmented; and anything which tends to lower the standard of healthiness in the mothers tends necessarily to favour the production of children debilitated from birth. The work of the Courts and Yards Committee in improving the surroundings of many of the homes of our poorer people will exert a beneficial influence alike upon "those who are living and those who are to be born"; though courts rarely can be desirable surroundings in which to bring up young children. During the year I certified that 14 houses were, in my judgment, unhealthy ones.

There were 140 deaths from tuberculous disease of the lungs registered during the year, a number slightly above the average; if we assume that for every death there are living four persons who suffer from this disease in the City—and that is, I think, rather within than over the number—we have at any given moment between five and six hundred people afflicted with Phthisis (Consumption) in

our midst; and the question arises as to what steps should be taken to deal with this ailment. I have long been in favour of its notification, but notification, unless it be supplemented by sanatorium treatment, is only of avail to give us some reliable information as to the amount and distribution of the disease. A number of Sanitary Authorities either alone, or in conjunction with others, erect and maintain Sanatoria; but that course is not necessary in our case. The amount of a halfpenny rate would secure to the City a dozen beds in the admirable Sanatorium at Kelling—a Sanatorium much more favourably situated than one could be within our own district. Assuming the average stay per patient to be three months, that would enable us to pass 50 patients through this Sanatorium a year. The benefit of Sanatorium treatment is not limited to the actual patient; he, or she, becomes a propagandist of hygienic rules after leaving the Sanatorium. At present a very considerable number of persons—and sometimes families—fall necessarily upon the rates through the wage-earner being incapacitated by tuberculosis. A fair proportion of these, if afforded Sanatorium treatment in the earlier stages of the ailment, would make satisfactory recoveries; and, in my judgment it would prove more economical to adopt this course than to continue the present system, or, rather, want of system, in combating this communally costly disease. The Report of the Royal Commission on Tuberculosis should lead all Sanitary Authorities to take special care to protect their milk supplies from being drawn from or mixed with the milk of tuberculous cows. Repeated and systematic veterinary inspection of all milking cows, and the use of the tuberculin test, should be required—precautions which are adopted by the Corporation at the Whitlingham farm. The death-rate from all the tuberculous diseases was 2.0 per 1000 of the population at all ages, the corresponding figure in 1905 being 1.9 per 1000. On the other hand, the special death-rate from Respiratory diseases (excluding Phthisis) was lower than in 1905 (2.2 as compared with 2.6 per 1000). The death-rate from Diphtheria was practically the same (0.22 as compared with 0.21), but that from Diarrhœal diseases was higher—1.57 as compared with 1.27 per 1000—and is the highest for the last three years. The fact that the special Diphtheria death-rate remained low is very gratifying, seeing

that the total number of cases was in the proportion of nineteen to eleven notified in 1905. The greater number of the deaths from this disease were due, as usual, to Paralysis of the Heart. Against the paralysis which follows Diphtheria, Anti-Toxin confers no immunity, at any rate, in cases such as we get at the Isolation Hospital, the majority of which do not come into that Institution in the earlier stages of the disease. The efficacy of the anti-toxic treatment varies in an inverse ratio with the time which is permitted to elapse between the onset of the ailment and the application of the antidote; hence the cardinal importance of administering anti-toxin at the earliest moment after the disease is diagnosed, or even suspected. In dealing with outbreaks of Diphtheria in dwellings, I have found the administration of prophylactic injections of anti-toxin, to contacts, very efficacious in checking the spread of the disease. Notwithstanding the occurrence of a relatively widespread epidemic of Scarlet Fever, the death-rate from it, Hospital and home-treated cases included, was less than 1 per 1000 of the total population. The deaths attributed to Alcoholism (including under this heading Cirrhosis of the Liver) were at the same rate as in the preceding year; whilst those attributed to Venereal diseases were considerably less in number.

The average number of patients in the Isolation Hospital on Saturday nights throughout the year was 70, and the average length of stay of each patient was 39 days. The average number of the nursing staff was 18, and the average number of the domestic staff 12. In my 1905 Report (p. 12), I drew attention to the want of more observation and isolation wards—a want which the experience of 1906 made exceptionally pressing; in fact, the provision of these has become of the first importance; so many of the cases notified are found to have either not the disease notified, or, more commonly, in addition to the disease notified, some other infectious ailment, e.g., Diphtheria super-posed upon Scarlet Fever, or associated with Measles, or Scarlet Fever with Whooping Cough or Chicken-pox, or, possibly, with a contagious disease such as itch, ringworm, etc. To prevent these diseases spreading among other patients, it is necessary for us to be able absolutely to isolate the victim of the multiple disorders. Then, too, it is of importance to segregate

patients, say with Scarlatinal nose disease, from the other patients with the same basic disease, but free from the nasal complication, and generally it may be affirmed that the trend of scientific treatment of infectious diseases, and especially of their complications, is toward complete isolation of the patient. And if isolation be the right method of treating an infectious ailment, as unquestionably it is, any method which improves the isolation of the individual cases must be on right lines. The mixing of a number of persons suffering from the same disease, but at differing stages of it, in large common wards also is steadily to be discouraged; cases of the same disease constantly differ markedly in intensity and relative infectivity. In one of the Metropolitan Asylums Board Fever Hospitals large common wards have been divided up into glass-partitioned cubicles, in which patients with the same disease are kept apart, but yet can see and talk to each other. It is in this direction that Fever Hospital organisation, in my judgment, will be developed in the future, and, in my judgment, this will prove both more efficient and indirectly more economical than does the common ward system, which leads to secondary infectious exacerbations, and complications, all of which necessitate a more lengthened stay in the hospital, and a more lingering and infectious convalescence.

The year was remarkable for a cyclic outbreak of Scarlet Fever on an epidemic scale—(I do not regard any disease as having attained to the proportions of an epidemic unless the number of cases exceed 1 in 10,000 of the population per week)—and the type of the disease itself was yet more remarkable for being of an exceptionally mild type—so mild, in fact, that it was constantly overlooked, and was often only notified when some desquamation was noticed. A guide to the relative mildness of the disease is furnished by the fact that, although nearly 500 cases were treated at the Fever Hospital, not a single death occurred from Scarlet Fever, though two did occur from Scarlet Fever plus another disease. Besides Scarlet Fever, some Measles and Whooping Cough interfered seriously with the normal working of the Schools, and for one or other, and sometimes for two together, of these diseases, a very large number were closed. For the two latter months of the year I had the invaluable assistance of Dr. Blake, and as the result of examining classes, etc.,

in Schools, some scores of children whom he found attending the Schools in a more or less infectious condition were excluded with beneficial effects. With a view to controlling more effectually the re-admission of children to the Schools who have been known to have Scarlet Fever or Diphtheria, I have arranged for the issue of special certificates from my office, and on three afternoons a week one of us has been kept fairly busy in examining the supposed convalescents. In all cases of suspected Diphtheria we take swabs, and in many of Scarlet Fever also, and it is quite remarkable to find the high proportion of throats in which, as the result of bacteriological examinations, we find specific bacilli. Bacteriological examinations we find also most useful at the Hospital, and in all doubtful or suspicious cases which come under our notice in homes. In fact, it is not too much to say that this work is invaluable to us, and that its continuance and extension is essential to the proper working of the Department. As the result of extended experience of their capacity for disseminating disease, I remain strongly of opinion that all Sunday Schools ought to be subject to a sanitary control as to crowding, ventilation, etc., of the same character as that which prevails in the Weekday Schools.

The Midwives Act has added, of course, to the work of the Department, and I have been very glad to make use of the services of our lady inspectors (each of whom is a certified midwife) in investigating "still-births," etc., and in inspecting for me the bedrooms of the practising midwives. There are 9 midwives on our register, and I am pleased to be able to report, on the whole, favourably of their work. One midwife during the year was struck off the roll by the Central Midwives Board. The protection which this Act is intended to afford to the public will be much more complete after April 1st, 1910, when certain stipulations, now dormant, will become effective. At present, if an unregistered person act as a midwife, she does not appear to be amenable to the law, except as the result of a prosecution which may be instituted after an inquest. In addition to care and cleanliness over instruments, bags, etc., and the wearing of washable dresses, I have directed that special care shall be paid to the hands, and particularly to keeping the finger-nails

clean. 43 "still-births" were notified during the year. I am confirmed in the belief I expressed last year, that this Act, administered carefully, will save lives, and spare many families the desolating loss, and the State the drain of racial vitality which is involved in the untimely deaths of mothers in child-birth.

In carrying out the Factory and Workshops Act, 612 inspections were made, and 50 deficiencies reported, and remedied. 73 lists of out-workers were sent in (34 of them twice a year), and 1,098 inspections of out-workers' premises were made; in 284 instances work was being done in unwholesome premises (Section 108), the greater number of which were dealt with by verbal notices, as in 29 instances only had formal notices to be issued; in 69 instances infectious illnesses occurred in out-workers' dwellings. The total number of registered workshops was 557, and at the end of the year there were in use 4 underground bakehouses. The insanitary conditions which have been dealt with are set out in the Report of the Chief Sanitary Inspector.

Under the Foods and Drugs Act 248 samples were purchased and submitted for analyses during the year, and 13 samples of water were taken from the rapidly lessening number of wells. In 21 instances proceedings were taken against vendors of milk, and in 19 of these fines varying from five shillings to £10 were inflicted (fuller details are set out in the Chief Inspector's Report), and 21 other vendors received written warnings that their milk was not deemed satisfactory. 56 of the milk samples were taken on Sundays. It is only just to the milksellers to say that the majority of the samples taken yielded satisfactory results, and the percentages of cream in the good samples show that the standard adopted by the Board of Agriculture—3.0 per cent.—is a very fair one, and errs, if it do err, on the side of deficiency rather than on that of excess.

The Report of the Chief Sanitary Inspector gives an account of the practical work carried out during the year, and summarises what has been done to maintain a sanitary condition, and to improve the general state of dairies, cow-sheds, milk shops, common lodging-houses, and slaughter-houses. (In respect of the latter I am glad

to think that the recommendation I made ten years ago in favour of a Public Abattoir has some likelihood of being carried into effect.) He also records the changes which have been effected in the character of the closet accommodation, from which it will be seen that the change to a water-carriage system is being effected continuously, this change last year occurring in over one thousand instances. The Canal Boats Inspector's Report has been very satisfactory.

I include, as in previous years, the statistical table showing the number of tenements in the City at the 1901 census, and the tenements of less than five rooms (differentiating those occupied by varying numbers of persons) in the wards of the City. I also include, for the first time, an important table showing the differentiated death-rates in the parishes of the City and the relative densities of their population. Some little delay has taken place in the issuing of this Report, due to my occupation with the preparation of evidence for the Boundary Inquiry, and on Medical Assistance to the Poor for the Royal Commission, and last, but not least, to the unusual pressure of departmental work.

Signed,

H. C. PATTIN.

April 25th, 1907.

METEOROLOGICAL NOTES.

(From observations taken by MR. A. W. PRESTON, F.R.Met.S., at
Norwich.)

Barometer (reduced to sea level { Highest (Jan. 23rd)... 30.65 ins.
and 32deg. Fah.), from 9 a.m. { Lowest (Feb. 10th) ... 28.83 ins.
and 9 p.m. readings :— { Mean 29.943 ins.

Temperature—Maximum (September 3rd) 93.0 degrees
Minimum (December 27th) { in screen 15.8 ,,
,, ,, { on grass 13.2 ,,

Mean daily maximum 57.1 ,,

Mean daily minimum 42.3 ,,

Mean temperature of year 49.7 ,,

Mean daily range 14.8 ,,

Mean dry bulb (9 a.m.) 50.6 ,,

Mean wet bulb (9 a.m.) 47.2 ,,

Mean dew point (9 a.m.) 43.8 ,,

Mean relative humidity (9 a.m.) ... 78%

No. of nights with { in screen ... 58
frost { on grass ... 116

Rainfall—Total fall 28.54 ins

Above average by 2.79 ins.

Greatest fall in one day (November 8th) ... 1.05 ins.

Number of days on which snow fell 202

Number of days on which rain or snow fell ... 202

Number of days on which snow fell 31

Wind—Prevailing directions, w. and s.w. Gales on 15 days.

Summary of the Geology of Norwich.*

The geological construction of the soil underlying the City is simple in character. The higher levels are made up of glacial beds, through which the valleys have been excavated, exposing at their margins the crag formation and chalk, while gravel and alluvial deposits occupy the lower ground. The chalk, which at Norwich is nearly 1,200 feet thick, and underlies the whole of the City, comes to the surface in the Market Place, and in other places at a similar level; but it may be reached at no great depth in all parts of the Municipal area. The order of the succession of the glacial and crag beds is shown in excavations on the sides of the high ground surmounted by Mousehold Heath, between which Heath and the City proper winds the River Wensum. Except for some layers of peat in the valley, and a bed of brick-earth over part of the higher ground (as, for example, near the Victoria Station), the soil of the City is of a porous character, and much percolation of fluid takes place through the gravels, etc., into the chalk. The general trend of the drainage of the greater portion of the inhabited area of the City is toward the Wensum.

* Compiled from information contributed by Mr. F. W. Harmer, F.G.S.

DEMOGRAPHICAL STATISTICS.

<i>Enumerated Population at the Census of 1901</i>	...	...	111,733
<i>Estimated Population in the middle of 1906</i>	...	...	117,958
<i>Area in Statute Acres</i>	...	...	7,582
<i>Density of Population (i.e., number of persons per acre)</i>			15.5
[Rateable value, £440,000.]			

<i>Total number of Births registered in 1906</i>	...	...	3,086
<i>Representing a Birth-rate of</i>	...	26.2 per	1,000
<i>Average Birth-rate of the 76 great towns being</i>	...	27.8 per	1,000

<i>Total number of Deaths registered in 1906 (a)</i>	...	...	2,084
<i>Representing a gross recorded Death-rate of</i>	...	17.6 per	1,000
<i>*“ Corrected Death-rate ” for the year</i>	...	16.0	„
<i>† Average Death-rate in the 76 great towns</i>	...	15.9	„
<i>‡ Comparative Mortality figure</i>	...	...	1,039
<i>Average Norwich Death-rate for the previous</i>			
<i>5 years, 1901 to 1905 (inclusive)</i>	...	...	17.0 per 1,000

<i>Deaths from the seven principal Epidemic Diseases</i>			
<i>numbered</i>	...	...	352
<i>Representing a Zymotic Death-rate of</i>	...	2.9 per	1,000
<i>Average Zymotic Death-rate in 76 great towns</i>			
<i>being</i>	...	2.0	„

(a) Inclusive of non-residents.

* The “ Corrected Death-rate ” signifies the Death-rate which would obtain in Norwich if the local age and sex distribution were the same as those of the country generally.

† Estimated from the Registrar-General's Quarterly Reports.

‡ Taking 1,000 as the mortality figure of the United Kingdom as a whole.

The Deaths of Norwich Citizens *from Zymotic Diseases* included :

	Scarlet Fever.	Diphtheria.	Enteric Fever.	Measles.	Whooping Cough.	Diarrhoeal Diseases.	Puerperal Fever.	Erysipelas.	Influenza.
Under 5 years of age ...	7	11	1	91	20	175	—	3	—
Over 5 years of age ...	4	16	10	8	—	11	3	12	20

A glance at the above table will show how very large a proportion of the deaths occurred in children under five years of age, and also how great a number of these succumbed to Measles, Whooping Cough, and Diarrhoeal Diseases.

The deaths under one year of age numbered 525, representing a death-rate of 4.5 per 1,000 of the population at all ages.

The Infant Mortality Rate (i.e., the proportion of deaths under one year of age to every 1,000 birth) was 172. 5

In the 76 great towns it averaged 145.75

This is a slightly better return for Norwich as compared with the 76 towns, than that of last year, the figures in 1905 being 174.0 and 139.0 respectively. A special report differentiates the certified causes of death.

The Death-rate between the ages of 1 and 5 years was 2.1 per 1,000 of the population at all ages; in 1905 it was 1.2.

The Death-rate between the ages of 5 to 15 was 0.61 per 1,000 of the population of all ages; in 1905 it was 0.54.

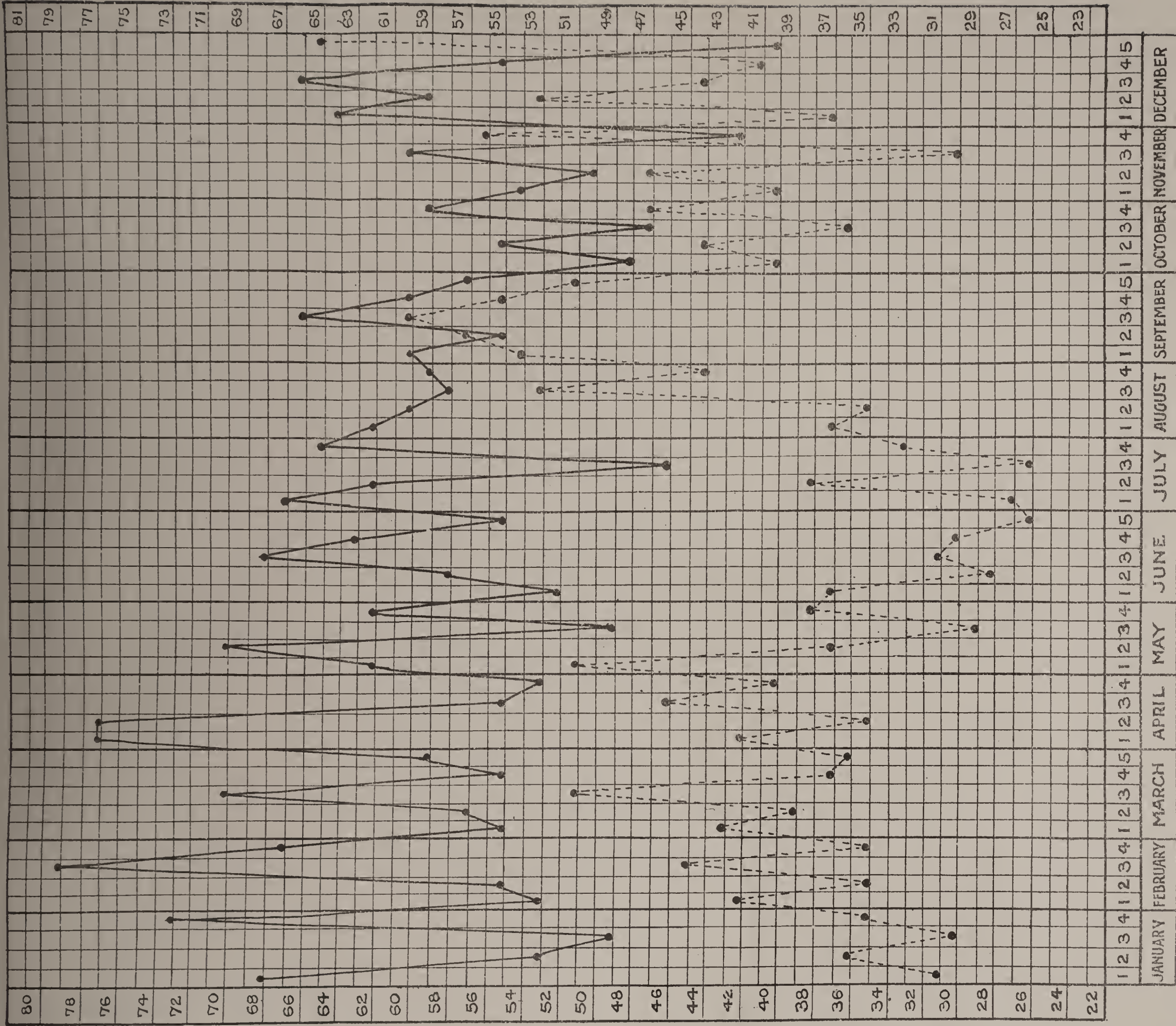
The Death-rate between the ages of 15 and 25 was 0.65 per 1,000 of the population of all ages; in 1905 it was 0.7.

The Death-rate between the ages of 25 and 65 years of age was 4.5 per 1,000 of the population at all ages; in 1905 it was 4.3.

1906

Gross recorded number of DEATHS from all causes, BLACK DASHES •-----

Gross recorded number of BIRTHS, BLACK LINE •-----



INFANTILE MORTALITY DURING THE YEAR 1906.

Deaths from stated Causes in Weeks and Months under One Year of Age.

CAUSE OF DEATH.		Under 1 Week	1-2 Weeks.	2-3 Weeks.	3-4 Weeks.	Total under 1 Month.	1-2 Months.	2-3 Months.	3-4 Months.	4-5 Months.	5-6 Months.	6-7 Months.	7-8 Months.	8-9 Months.	9-10 Months.	10-11 Months.	11-12 Months.	Total Deaths under One Year.
All Causes.	Certified ...	66	14	26	12	118	70	53	44	27	32	35	19	23	39	24	28	512
	Uncertified ...	12	—	—	—	12	—	—	—	—	—	—	—	—	1	—	—	13
Common Infectious Diseases (29)	Small-pox ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Chicken-pox ...	—	—	—	—	—	—	—	—	—	—	—	—	—	2	1	—	3
	Measles ...	—	—	—	—	—	—	—	—	—	1	—	4	—	3	4	5	17
	Scarlet Fever ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Diphtheria: Croup ...	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	1
	Whooping Cough ...	—	—	—	—	—	1	1	1	1	2	—	—	—	1	—	1	8
Diarrhoeal Diseases. (151)	Diarrhoea, all forms ...	—	—	5	3	8	11	10	15	11	11	12	8	8	9	9	9	121
	Enteritis (not Tuberculous) }	—	—	—	—	—	1	—	2	—	1	3	—	—	2	1	1	11
	Gastritis, Gastro-intestinal Catarrh }	—	—	1	—	1	6	4	2	1	1	1	—	1	1	1	—	19
Wasting Diseases (165)	Premature Birth ...	49	4	7	2	62	3	2	—	—	—	—	—	—	—	—	—	67
	Congenital Defects ...	4	1	1	—	6	—	—	1	2	—	—	—	—	—	—	—	9
	Injury at Birth ...	2	—	—	—	2	—	—	—	—	—	—	—	—	—	—	—	2
	Want of Breast-Milk ...	—	1	—	—	1	—	—	—	—	—	—	—	—	—	—	—	1
	Atrophy, Debility, Marasmus }	14	5	10	5	34	18	14	9	1	2	2	1	1	3	—	1	86
Tuberculous Diseases (37)	Tuberculous Meningitis	—	—	—	—	—	—	—	—	—	1	2	—	—	1	1	—	5
	Tuberculous Peritonitis: Tabes Mesenterica }	—	—	—	—	—	3	3	4	2	—	2	—	3	3	—	—	20
	Other Tuberculous Diseases }	—	1	—	—	1	1	—	1	2	1	—	1	1	3	1	—	12
	Erysipelas ...	—	—	1	—	1	1	—	—	—	—	—	—	—	—	—	—	2
	Syphilis ...	1	—	—	—	1	—	—	—	—	—	2	—	—	—	—	—	3
	Rickets ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Meningitis (not Tuberculous) }	—	—	—	—	—	1	—	—	—	—	—	—	—	1	—	1	3
	Convulsions ...	5	2	—	1	8	10	8	4	2	4	6	2	3	2	—	4	53
	Bronchitis ...	1	—	1	—	2	5	4	1	2	2	—	3	3	4	3	3	32
	Laryngitis ...	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	1
	Pneumonia ...	—	—	—	—	—	3	4	3	3	4	2	—	1	4	3	2	29
	Suffocation, overlaying	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Other Causes ...	2	—	—	1	3	5	3	1	—	1	3	—	2	1	—	1	20
		78	14	26	12	130	70	53	44	27	32	35	19	23	40	24	28	525

DIFFERENTIAL PARISH STATISTICS.

PARISH.	Area in Statute Acres.			Population at all Ages 1901 Census.	Density of Population per Acre.	Deaths at all Ages.	Under 1 year.	1 to 5 years.	65 & upwards.	Deaths from Zymotic Diseases.	Deaths from Tuberculous Diseases.	Gross Death Rate per 1000 of the Population at all Ages.
	A.	R.	P.									
All Saints with S. Julian	27	3	37	1962	70	30	4	3	11	4	8	15.2
S. Andrew	11	1	10	500	45.5	8	4	—	4	2	—	16.0
S. Augustine	21	2	27	2373	110	28	9	3	8	6	2	11.8
S. Benedict	18	2	38	1865	101	18	7	3	6	4	2	9.6
S. Clement (without)	220	3	35	7985	36	119	34	16	29	19	15	14.9
S. Clement (within) with S. Edmund	19	1	12	836	44	23	6	4	6	4	2	27.5
S. Etheldred with S. Peter Southgate	25	1	26	1694	67	20	5	1	7	3	7	11.8
S. Geo. Colegate	16	3	15	1351	80	29	8	8	8	9	4	20.8
S. Geo. Tombland	14	1	32	729	52	7	—	1	3	3	—	9.5
S. Giles'...	22	3	18	1211	57	21	5	2	6	3	4	17.3
S. Gregory with S. Lawrence	14	3	15	963	64	11	4	1	2	2	1	11.4
S. Helen (with the Great Hospital)	19	1	35	541	28	27	2	—	22	—	1	50.0 (a)
S. J. Maddermarket	8	1	25	262	32	2	—	1	—	—	1	7.6
S. J. Sepulchre...	30	3	18	2732	90	40	15	9	5	11	4	14.6
S. J. Timberhill	10	2	23	1015	100	11	5	2	2	4	2	10.8
S. James with Pockthorpe	408	2	3	9113	22.5	153	67	35	16	46	21	16.7
S. Margaret with S. Swithin	12	3	31	1114	85	26	10	5	6	8	3	23.3
S. Martin-at-Palace	12	0	23	584	48	11	4	2	1	4	1	18.9
S. Martin-at-Oak	29	1	35	2432	84	63	26	17	8	24	6	25.9
S. Mary-at-Coslany	12	1	8	1208	100	18	5	3	5	7	1	14.9
S. Michael-at-Coslany	12	0	0	647	54	9	2	0	3	2	1	13.9
S. Michael-at-Plea	5	1	36	106	21	2	—	—	1	1	1	18.9
S. Michael-at-Thorn	15	2	16	1406	90	13	4	2	5	3	0	9.2
S. Paul	42	3	6	5434	126	88	30	19	19	15	10	16.2
S. Peter-at-Hungate	3	0	33	258	86	11	—	—	6	—	1	42.6
S. Peter Mancroft	42	0	7	1557	37	36	4	1	14	4	3	23.1
S. Peter Parmentergate	49	1	15	2570	52	33	14	1	9	7	2	12.8
S. Saviour	14	1	20	1180	84	27	6	5	8	8	3	12.9
S. Simon and S. Jude	4	0	20	339	85	6	1	1	2	1	1	17.7
S. Stephen's (with N. & N. Hospital)	56	1	23	3235	58	197	14	14	29	16	26	60.8 (b)
Eaton (with Jenny Lind Infirmary)	1234	3	30	3152	2.5	85	13	11	16	11	13	26.9 (c)
Earlham	1305	1	4	320	0.25	1	—	—	1	—	—	3.0
Heigham*	817	1	6	33015	40.5	688	139	78	261	112	65	20.8
Hellesdon (Hamlet of)	872	1	20	953	1.09	14	5	—	5	4	2	14.6
Thorpe Hamlet (with Brit. Barracks and Prison)	751	0	7	6450	8.5	103	24	6	2	8	3	15.9
† Trowse, Carrow, and Bracondale	125	1	34	3786	30	1	—	—	1	—	—	0.2
Cathedral Precincts (S. Mary-in-the-Marsh)	47	1	5	451	9.5	2	—	—	1	—	—	4.4
Lakenham S. Mark	1102	1	9	6113	5.5	125	40	4	37	11	14	20.4
On Boats and Barges (Wensum)	—			—	—	2	—	—	1	—	1	—
Extra Parochial (liberty of Town Close)	122	4	0	299	2.5	—	—	—	—	—	—	—

(a) Deducting Deaths in Great Hospital (18), Death Rate for remainder of Parish was 16.6.
(b) " " in Norfolk and Norwich Hospital (153), Death Rate for remainder of Parish was 13.5.
(c) " " in Jenny Lind Infirmary (35), Death Rate for remainder of Parish was 15.8.
* Includes St. Bartholomew, St. Philip, Holy Trinity, and St. Thomas, Heigham.
† Trowse St. Andrew, with Lakenham St. John the Baptist, and All Saints (part of).

Whole City—Density of Population per acre, 15.5. Gross Death Rate, 17.6.

The Death-rate at and over 65 years of age was 5.0 per 1,000 of the population at all ages; in 1905 it was 4.9.

There were 27 more male than female children born in the city during the year. 125 of the births were those of illegitimate children. There were 43 deaths under one year of age of *illegitimate* children, or 344 *per 1,000 births*—the rate among the *legitimate* children being 172.5 *per 1,000 births*, or just *half*.

NORWICH SPECIAL DEATH-RATES FOR 1906.

(The Registrar-General not having as yet issued his Annual Report, I am unable to give special rates for the 76 great towns.)

	Per 1,000 of the population at all ages. 1906.	In 1905.	In 1904.
From all Tuberculous Diseases ...	2.0	1.9	2.3
,, Tuberculosis of the Lungs			
(Phthisis)	1.2	1.3	1.4
,, Respiratory Diseases, exclud-			
ing Phthisis	2.2	2.6	2.1
,, Heart Disease	1.7	1.6	2.1
,, Scarlet Fever ... ..	.093	.002	.017
,, Diphtheria ... ..	.22	.21	.08
,, Enteric (Typhoid) Fever ...	.093	.08	.12
,, Puerperal Fever ... ..	.025	.06	.03
,, Erysipelas ... ..	.12	.103	.09
,, Measles ... ..	.83	.002	1.1
,, Whooping Cough ... ..	.16	.11	.33
,, Diarrhœal Diseases	1.57	1.27	1.1
,, Influenza ... ..	.16	.1	.17
,, Alcoholism ... ..	.14	.14	.16
,, Venereal Diseases ... ..	.04	.09	.11

The following Deaths occurred in *Public Institutions* :—Norfolk and Norwich Hospital, 140; the Union Infirmary, 127; the Isolation Hospital, 24; Jenny Lind Infirmary, 34; the Prison, 0; the Barracks, 1.

Inquest cases amounted to 6.3 per cent. of deaths from all causes.

In the 76 great towns the average was 7.7 per cent.

Deaths in Public Institutions amounted to 16.4.

In the 76 great towns the average was 23.8 per cent.

Uncertified deaths (*i.e.*, death certificate not signed by a registered Medical Practitioner) amounted to 0.7 per cent.

Average in 76 great towns, 1.0 per cent.

Thirteen of the deaths of infants were uncertified, *i.e.*, the certificate of death was not signed by a Medical Practitioner or attested by the verdict of a Coroner's jury. 7 of these deaths occurred on the 1st day of life, 2 on the 2nd, and all but one within the 1st week. "Premature Birth" was the assigned cause of death in 5 instances, "Debility" and "Want of Vitality" in 4, and "Convulsions" in 4.

Once more I point how discreditable it is to the State, as the Guardian and Conservator of the prospective interests of the race, to lose a single subject without being furnished with a certificate of the cause of death, properly attested. The law now allows a Registrar, almost always a layman, to accept a certificate from an unqualified person, provided that he, the Registrar, is persuaded that deception is not being practised. The proper course is, without doubt, to hold an inquiry in every such case, and, where, needful, a post-mortem examination. These steps will probably be taken only when the registration of the cause of death is placed under the control of the Sanitary Authority.

I caused enquiries to be made in 501 cases concerning the *number of children dying under one year of age who were insured*, and found that 43.5 per cent. of these were insured.

There were 31 inquests held by the Coroner or his Deputy.

Of the 46 deaths of illegitimate infants, 16 were certified to be due to Diarrhœal Diseases, 12 to Wasting Diseases, 6 to Lung Diseases, 3 to Tuberculous Disease, 1 to "Dentition," 2 to "Convulsions," 1 to Congenital Syphilis, 1 to "Want of Breast Milk," 3 to "Premature Birth," and 1 to "Measles."

List of Ecclesiastical Parishes in the City of Norwich, with the Number of inhabited Houses and the Population enumerated in each at the Census of 1901.

	Population.	Inhabited Houses.	No. of Persons per House
*Drayton, S. Margaret, with Hellesdon, S. Mary (part of)	950	203	4·7
†Earlham, S. Mary, with Bowthorpe, S. Michael (part of)	320	73	4·4
Eaton, S. Andrew	3,152	678	4·6
HEIGHAM:			
Holy Trinity	10,956	2,720	4·0
S. Bartholomew	11,584	2,570	4·5
S. Philip	5,350	1,377	3·9
S. Thomas	5,125	1,008	5·0
Lakenham, S. Mark	6,113	1,437	4·3
New Catton, Christ Church... ..	7,985	1,779	4·4
NORWICH:			
All Saints with S. Julian	1,962	460	4·3
S. Andrew	500	114	4·4
S. Augustine	2,373	554	4·3
S. Benedict	1,865	443	4·2
S. Clement with S. Edmund	836	192	4·4
S. Etheldred with S. Peter Southgate	1,694	378	4·5
S. George of Colegate	1,351	324	4·2
S. George Tombland	729	131	5·6
S. Giles	1,211	288	4·2
S. Gregory with S. Lawrence	963	215	4·5
S. Helen	541	81	6·7
S. James with Pockthorpe	9,113	1,848	5·0
S. John de Sepulchre	2,732	594	4·6
S. John Maddermarket	262	71	3·7
S. John the Baptist, Timberhill	1,015	235	4·3
S. Margaret with S. Swithin	1,114	316	3·5
S. Martin at Oak	2,432	577	4·2
S. Martin at Palace	584	151	3·9
S. Mary at Coslany	1,208	293	4·1
S. Mary in the Marsh	451	78	5·8
S. Michael at Plea	106	29	3·7
S. Michael at Thorn	1,406	345	4·1
S. Michael Coslany	647	157	4·1
S. Paul	5,434	1,198	4·6
S. Peter Hungate	258	67	4·0
S. Peter Mancroft	1,557	308	5·0
S. Peter Permoungergate	2,570	589	4·4
S. Saviour	1,180	307	3·8
SS. Simon and Jude	339	67	5·0
S. Stephen	3,235	715	4·5
Thorpe, S. Matthew	6,450	347	4·8
†Trowse, S. Andrew, with Lakenham, S. John the Baptist and All Saints (part of)	3,786	789	4·3
Extra Parochial (Liberty of Town Close)	299	61	4·9

* The Parish of Drayton S. Margaret with Hellesdon S. Mary is partly in the Civil Parishes of Drayton and Hellesdon. The total number of Inhabited Houses was 371, and the Population 1984.

† The Parish of Earlham S. Mary with Bowthorpe S. Michael is partly in the Civil Parish of Bowthorpe. The total number of Inhabited Houses was 85, and the Population 382.

‡ This Parish is partly in the Civil Parish of Trowse Newton. The total number of Inhabited Houses was 951, and the Population 4,553.

FEVER HOSPITAL.

During the year 484 patients with Scarlet Fever, 165 with Diphtheria, and 26 with Enteric Fever were removed to and treated in the Fever Hospital. In 1905 the corresponding figures were, 87, 96, and 23.

Of the 675 cases removed to the Hospital, 294 were males and 381 females. In 1905 these proportions were 92 and 115 respectively.

With Scarlet Fever 82 of the patients were under 5 years of age.

„	„	195	„	„	between 5 and 10 years of age.
„	„	121	„	„	between 10 and 15 years of age.
„	„	67	„	„	between 15 and 25 years of age.
„	„	19	„	„	over 25 years of age.

With Diphtheria 42 of the patients were under 5 years of age.

„	„	69	„	„	between 5 and 10 years of age.
„	„	26	„	„	between 10 and 15 years of age.
„	„	19	„	„	between 15 and 25 years of age.
„	„	9	„	„	over 25 years of age.

With Enteric Fever 3 of the patients were under 5 years of age.

„	„	3	„	„	between 5 and 10 years of age.
„	„	6	„	„	between 10 and 15 years of age.
„	„	10	„	„	between 15 and 25 years of age.
„	„	4	„	„	over 25 years of age.

It will be noticed that the greater number of patients were under 15 years of age,

There were 24 deaths in the Hospital during the year, 2 from Scarlet Fever, 13 from Diphtheria, 2 from mixed Diphtheria and Scarlet Fever, 1 from mixed Diphtheria and Measles, 2 from Enteric Fever, 2 from Tuberculous Disease, and 2 from Septic Pneumonia. The total Hospital death-rate was 3.5 per cent. for all diseases, for Diphtheria 10.0 per cent., Scarlet Fever 0.5 per cent., Enteric Fever 8.0 per cent.

There were five "return" cases during the year, or 0.75 per cent.—a result which bears testimony to the vigilance exercised in discharging patients.

The mortality was due chiefly to the large number of cases of Diphtheria which succumbed to paralysis of the heart.

The Wards were, as usual, kept bright and cheerful of aspect with flowers and plants throughout the year; presents from the friends and relatives of the patients, many of them quite poor people. The "Toy Fund," too, has been kept in tolerably sound condition chiefly by the donations of patients and their friends. The Hospital Committee made a special grant to provide toys at Christmas. The grounds about the Hospital continue to improve in appearance, and the garden to be more fertile. Some 6,750 articles passed through the steam disinfecter.

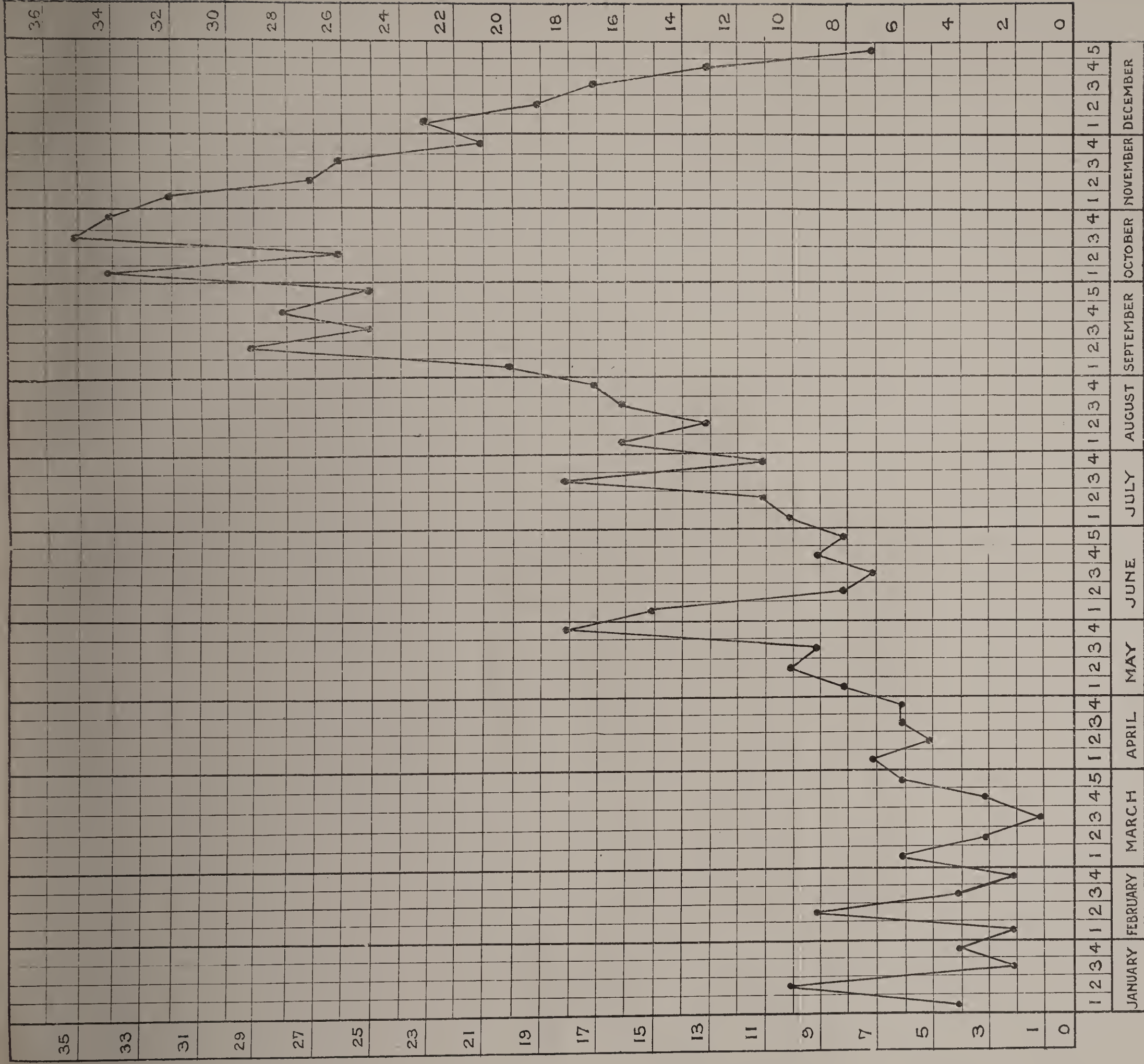
INFECTIOUS DISEASES.

Scarlet Fever.—735 notifications of Scarlet Fever in 604 dwellings were sent to me during the year. Of these notifications, 131 were secondary infections, *i.e.*, second or third cases in the same dwelling. The Chart gives a graphic representation of the prevalence, week by week, of the disease. I do regard the occurrence of Scarlet Fever in a proportion over one case to every ten thousand of the population a week, or, roughly, 12 cases a week, as constituting an "epidemic" condition of the disease.

Of the cases notified to me, 45.9 per cent. occurred in males and 54.1 per cent. in females; 17.1 per cent. of the patients were under 5 years of age, 39.4 per cent. between 5 and 10 years of age, 25.5 per cent. between 10 and 15 years of age, 12.5 per cent. between 15 and 25 years of age, and 5.5 were over 25 years of age (82.0 per cent. of the cases occurred in patients under 15 years of age).

1906

Notifications of SCARLET FEVER.



EAST OF ENGLAND PRINTING WORKS, NORWICH.

From enquiries conducted specially I found that of the infected dwellings 2.5 per cent. possessed only *one sleeping room*, the average number of the occupants being 4.5 persons; 22.3 per cent. possessed *two sleeping rooms*, the average number of the occupants being 2.5 persons per room; 57.7 per cent. possessed *three bedrooms*, the average number of the occupants being 1.8 persons per room; and 17.5 per cent. possessed *four or more bedrooms*, the average number of occupants being 1.07 persons per room.

As regards the disposal of excrement, 20.0 per cent. of the infected dwellings used "bins," 19.2 per cent. "pail" closets, and 60.8 per cent. water-closets.

Except in an outbreak, which was checked early in the year, I was not able to trace Scarlet Fever to any special milk supply, and am disposed to think that a great majority of the cases owed their infection to personal contact. As to the origin of this disease, we are in greater doubt than is the case with other zymotic ailments, and so long as this uncertainty continues our operations for preventing those conditions from arising which favour its development will be *pari-passu* imperfect, and our practical work confined rather to dealing with effects than causes. I am inclined to think that common use of an infected closet is a method by which this disease is propagated, and that *all the excretions of an affected person are infectious for a time, as well as the breath.*

Diphtheria.—There was an increase in the amount, but a lessening in the severity, of the Diphtheria notified, as compared with 1905, the actual number of cases being 190. The number of the notifications in 1905 was 129. There were 19 deaths recorded from this disease during the year, 2 of the fatal endings occurred in the Norfolk and Norwich Hospital, and 17 in the Isolation Hospital. The special death-rate was lower, being 1 in 10 persons attacked. In 1905 it was 1 in 5.1.

The 190 cases of Diphtheria notified to me occurred in 171 dwellings—there being 19 *instances of secondary infection*, that is, more than one case occurring in the same dwelling, or 1 to every 9 primary cases. 14 were notified from Public Institutions. Of the persons attacked, 60.0 per cent. were females and 40.0 per cent. males,

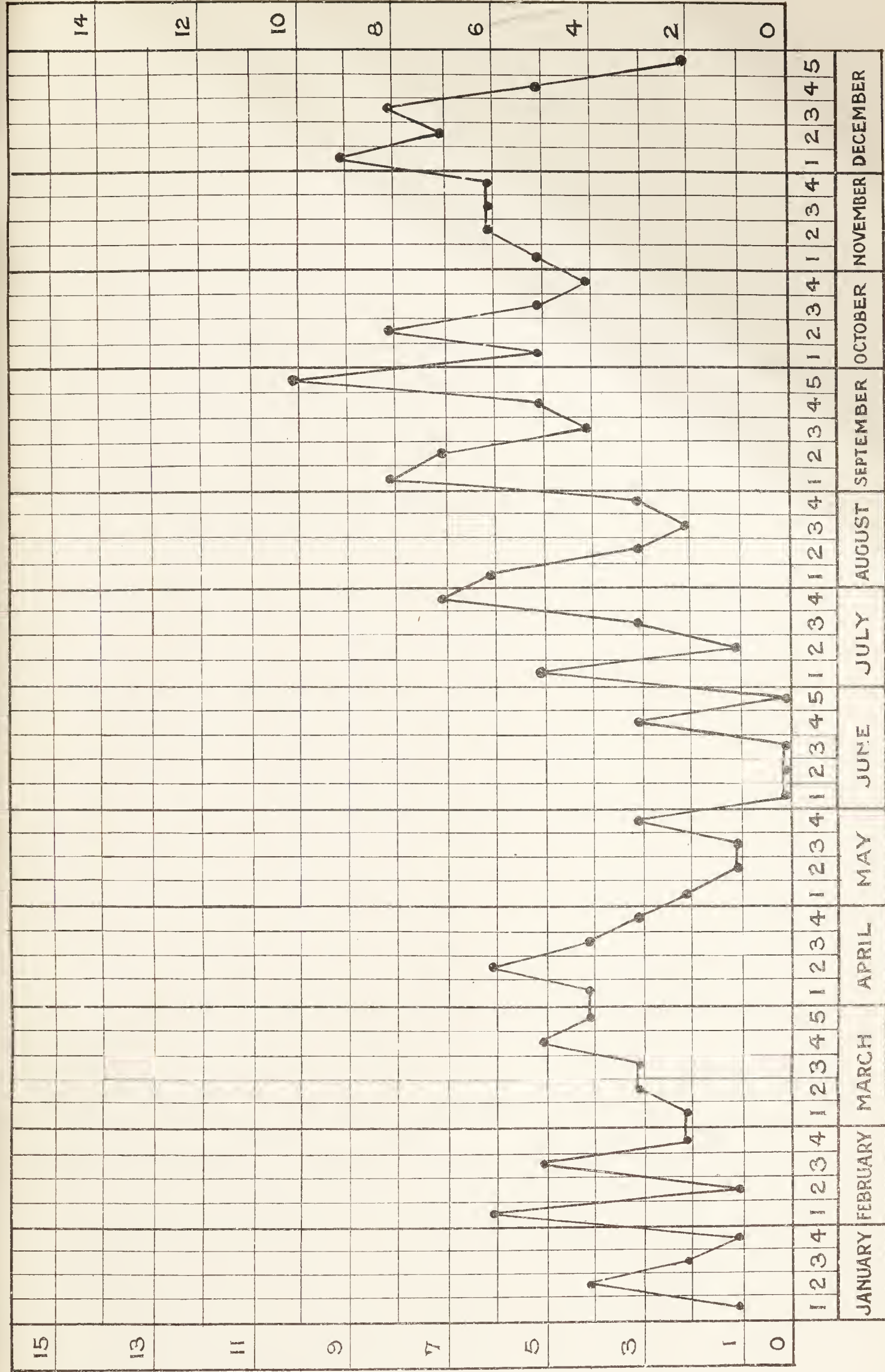
19.4 per cent. of the patients were under 5 years of age, 45.6 per cent. between 5 and 10 years, 14.1 per cent. between 10 and 15 years, 12.8 per cent. between 15 and 25 years, 8.1 per cent. over 25 years of age (79.0 per cent. were in persons under 15 years of age).

Systematic enquiries into the home surroundings of the patients entitle me to state that 1.1 per cent. of the infected dwellings possessed *only one sleeping room*, the number of the occupants averaging 4.5; 32.7 per cent. of the houses possessed *two sleeping rooms*, the average number of the occupants (of each room) being 2.3; 45.6 per cent. of the houses had *three bedrooms*, the average number of occupants being 1.8; and 21.6 per cent. of the dwellings possessed *four or more bedrooms*, with an average population of 1.3 persons per bedroom. 21.1 per cent. of the affected households made use of “*bins*,” 16.9 used pail-closets, and 62 per cent. *water-closets*. In 9.0 per cent. of the houses there was evidence of persistent *dampness* commonly of the walls or flooring, and due to the *absence of a “damp course”* in the former, and of a layer of concrete below the latter. On account of the importance of persistent dampness in or about a dwelling, I caused special enquiries to be made concerning the character of the paving, etc., of the yards adjacent to the infected dwellings, and found that 60.8 per cent. had yards covered with some *material impervious to fluids*; that 4.2 per cent. had yards partly paved, 13.2 per cent. cobbled yards, and 21.8 per cent. yards *without any paving at all*. In other words, 40.0 per cent. of the houses *adjoined yards offering greater or lesser facilities for the soakage of fluid into the soil about them*. 16.4 per cent. of the houses possessed no sinks, which means that *all household “slops,”* etc., and other *waste fluids would be pitched into and about the gutter in the yard*.

The Chart exhibits the variation in the prevalence of Diphtheria week by week throughout the year. I retain my belief that any condition of the atmosphere or of the surroundings, which tends to produce a congested condition of the tissues lining the throat—such as damp, foggy weather, particularly when associated with low barometric pressure, which leads to engorgement and relative congestion of the superficial vessels; or any irritating influence such as the noxious effluvia constantly given off by the contents of “bins,” “pail closets,” collections of refuse, etc.—distinctly favours the development of Diphtheria.

1906

Notifications of DIPHTHERIA.



Enteric (Typhoid) Fever.—89 cases of Enteric Fever were notified to me during the year, 6 of them being secondary infections. As the relative prevalence of this disease is a commonly accepted criterion of the sanitary condition of a district, its associations and surroundings become of special interest; and the importance of the subject justifies a more detailed account than is requisite in dealing with other filth diseases; the more particularly as Enteric Fever is rather *endemic* than epidemic in its character with us—that is to say, it has been prevalent for so many years that it must be looked upon as having rooted itself among us.

The following table gives the notifications of Enteric Fever in each year from 1880 to 1906, inclusive, and the mortality from the disease. There were 11 deaths registered in 1906, 4 of them in Public Institutions.

1880 { notifications of Enteric F. in }		1880 with 37 { deaths representing a mortality rate of }		20.5 %
50	„	1881	„ 15	30.0 „
47	„	1882	„ 8	17.4 „
34	„	1883	„ 11	32.3 „
121	„	1884	„ 30	24.8 „
584	„	1885	„ 92	15.6 „
262	„	1886	„ 39	14.5 „
136	„	1887	„ 20	14.7 „
171	„	1888	„ 19	11.1 „
166	„	1889	„ 22	13.2 „
176	„	1890	„ 31	7.6 „
163	„	1891	„ 21	12.8 „
106	„	1892	„ 19	17.9 „
314	„	1893	„ 36	11.4 „
150	„	1894	„ 22	14.6 „
226	„	1895	„ 24	10.6 „
196	„	1896	„ 20	10.2 „
234	„	1897	„ 33	14.0 „
259	„	1898	„ 48	18.5 „
144	„	1899	„ 20	14.0 „
163	„	1900	„ 12	7.4 „
127	„	1901	„ 15	11.8 „
57	„	1902	„ 5	8.7 „
92	„	1903	„ 5	5.4 „
111	„	1904	„ 15	13.5 „
53	„	1905	„ 9	17.0 „
89	„	1906	„ 11	12.3 „

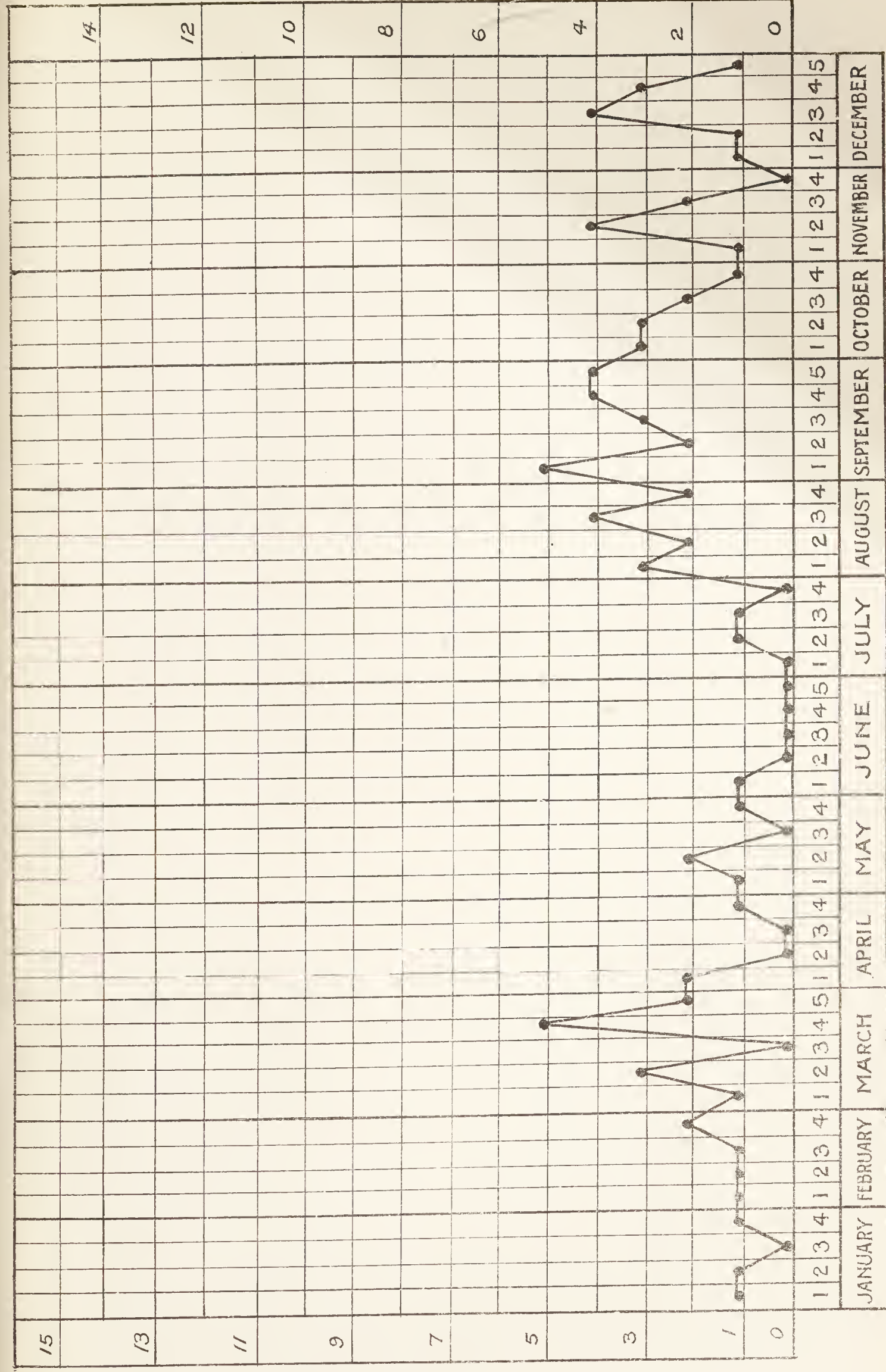
It will be noticed that the death-rate in 1880 from this disease averaged 20.5 per cent. of the cases notified, or, roughly, 1 case in every 5, and that last year the death-rate was 1 case in every 8. As I pointed out in my previous report, it does not follow necessarily that these figures represent the true state of the facts; that there has been, on the whole, a diminution in the cases of mortality cannot be doubted—but it must be remembered that most probably a number of the milder cases of the disease were not recognised and notified in 1880. Increasing skill in diagnosing the disease in its lighter forms has, in my judgment, led to a more accurate correspondence between the number of notifications sent in and the actual amount of the disease; although I still think that a number of cases of Enteric Fever of what is known as the “Ambulatory” type escape notification, and never receive medical treatment. So that here, as elsewhere, the notifications furnish a reliable guide to the relative prevalence of the disease, but must not be regarded as representing accurately the full amount. By “Ambulatory” Typhoid is meant so mild an attack that the patient keeps walking about pursuing his or her ordinary vocation in life, never ill enough to need a doctor, having some feeling of malaise and what is thought to be some transient diarrhoea. A lessening of the mortality from this disease can be looked confidently for now that we are able to set aside a pavilion at the Isolation Hospital for the treatment of the disease when it occurs in cramped, crowded dwellings. It is in such cases as these that the disease becomes most fatal, not necessarily on account of the severity of the seizure, but almost necessarily on account of the unfavourable nature of the surroundings. Last year the Enteric Fever generally was not of a relatively severe type.

Differentiating some characteristics of the 89 cases notified in 1906, and comparing them with those notified in 1905, 1904, 1903, I find that as regards

- (a) Sex. 40.5 per cent. of the cases occurred in males and 59.5 per cent. in females; the average percentages of the preceding three years were 52 males and 48 per cent. females. Why these changes have occurred I do not

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NOTIFICATIONS OF ENTERIC FEVER.



know ; the females are commonly more home-keeping in their habits than the males, on the other hand, the latter expose themselves to more extended means of infection.

(b) Age.

					Average percentage of the preceding three years.
6.3	{ per cent. of the patients were under 5 years of age }				8.0
2.8	„	„	between 5 and 10		17.0
17.3	„	„	„ 10	„ 15	18.3
17.9	„	„	„ 15	„ 20	10.0
17.9	„	„	„ 20	„ 25	17.3
17.9	„	„	„ 25	„ 35	15.0
11.3	„	„	„ 35	„ 45	5.6
8.6	„	„	„	over 45	8.6

It will be noticed that 26.4 per cent. of the cases occurred in children under 15 years of age—what may be called juvenile typhoid being a marked characteristic of the Enteric Fever which prevails in Norwich. The average number of such cases in the preceding three years was 42.3 per cent. of the total number.

(c) Crowding.

					Average number of occupants per bedroom.
2.6	{ per cent. of the affected dwellings had only 1 bedroom }				4.5 persons
26.5	„	„	„ 2	„	2.3 „
59.5	„	„	„ 3	„	1.9 „
11.4	„	„	„ 4 or more		1.5 „

The average corresponding percentages of the preceding three years were—1 bedroom, 4.8 per cent. ; 2 bedrooms, 31.3 per cent. ; 3 bedrooms, 51.0 per cent. ; 4 or more bedrooms, 15.9 per cent. ; the relative crowding being 3.4, 2.5, 2.5, and 1.3 persons *per room*. In estimating the influence of “man-crowding,” I have only concerned myself about the number of sleeping-rooms, the rooms in which crowding becomes important. The census returns are helpful here only in respect of tenements consisting of one room, which room must, of necessity, be used for bed and living-room ; and when it is

remembered how large a proportion of these are occupied by one old man or woman living alone, the incidence of the disease in houses containing one bedroom probably is much heavier than the figures represent.

(d) Water supply.

97.4 per cent. of the affected dwellings were supplied with the Company's water.

2.6 per cent. of the affected dwellings were supplied from wells.

Of the preceding three years the (averaged) corresponding proportions were 96.1 and 3.9 per cent.

The proportions in which houses are supplied with "pipe" or with well water are altering quietly but *continuously*; each year sees an increase in the number of houses supplied by the Company, and a decrease in the number of those drawing water from wells. I believe that at the present time over 97.5 per cent. of the houses are supplied by the Company with water. 3 wells were closed during the year, the water drawn from them being shown, by chemical analysis alone, to be unfit for drinking purposes. The persistence of Typhoid among us makes it necessary for us to take every possible precaution with regard to water. The Water Company expend great care upon the filtration and storage of the water it supplies to the citizens, and short of the demonstration by bacteriological experts of the specific bacillus of Enteric Fever being distributed by the Company with the water it abstracts from the Wensum, I see no sufficient reason for dissenting from the opinion expressed by the Official Analysts that it is "a perfectly safe water for dietetic use."

(e) Milk supply.

	Corresponding (averaged) proportions in the pre- ceding three years.
6.3 per cent. of the patients drank no milk	4.0
11.4 per cent. of the patients drank it in the raw uncooked condition	12.5
81.0 per cent. of the patients drank it only when first boiled or cooked in puddings or in hot tea, etc.	81.8
1.3 per cent. of the patients used condensed milk	1.5

Milk, I think, had, as in preceding years, little to do with propagating Enteric Fever amongst us ; its influence, anyway, must have been limited, for practically it is likely only to be a direct source of infection in 11 per cent. of the cases, among the drinkers of the *uncooked* article. At the same time I am bound to say that, but for the fairly general cooking of the milk consumed among us, we are practically at the mercy of the surrounding districts ; so large a portion of our supply comes from outside the city ; and, unfortunately, the need of a Medical-Officer of Health for the County of Norfolk is felt in more than the absence of concerted action between the City and the County Sanitary Authorities in the matter of milk supplies.

(f) Shell-fish. So far as I could learn, 83 per cent. of the cases *ate no shell-fish, either in the cooked or uncooked condition within three weeks of the outset of their ailment.* In the preceding three years the corresponding (averaged) percentage was 85. So this possible source of infection could not affect more than 17 per cent. of the cases last year, even supposing that the whole of these ate their shell-fish in an *uncooked condition.*

(g) Disposal of excrement.

27 per cent. of the affected dwellings used "bins."

18 ,, ,, ,, ,, pail-closets.

55 ,, ,, ,, ,, water-closets.

In the preceding three years the corresponding (averaged) percentages were 34.0 per cent. "bins" ; 25.0 pail closets ; 41.0 water-closets. It is much to be regretted that the power of the Sanitary Authority to enforce the provision of water carriage is restricted so seriously, as under the existing law, unfortunately, it is. Unless the Health Committee decide, in each particular instance, that there is insufficient accommodation, it cannot enforce the provision of a water-closet (*which it always recommends*), except in the now rare circumstance of the excrement having to be removed *through a dwelling* ; in which case water-closets

are insisted upon always. At the present time I estimate the number of houses provided with water-closets at over 60.0 per cent.

(h) Household drainage.

At 78 per cent. of the affected houses the Inspectors reported the drainage as "good." In the preceding three years the corresponding (averaged) percentage was 70.0 per cent.

Which means that, in the others, some defect in the drainage such as no sink (which means that all slop and other waste water would be pitched about the yard), sink waste-pipe not disconnected, or loose and defective "traps," etc., existed.

(i) Character of yard.

	Average of the preceding three years.
None of the affected dwellings had no yard	1.5
55.7 per cent. of the dwellings had paved yards	46.9
18.9 per cent. of the dwellings had <i>un-</i> <i>paved yards</i>	28.0
12.7 per cent. of the dwellings had <i>partly</i> <i>paved yards</i>	7.6
12.7 per cent. of the dwellings had <i>cobbled</i> <i>yards</i>	20.2

In other words, 44.0 per cent. of the dwellings had yards more or less liable to have the *subsoil soddened with moisture and impurities*. I have drawn attention repeatedly to the importance of having the soil which adjoins a dwelling covered with some material *impervious to fluids*, else it cannot be kept dry. A large number of the poorer dwellings in this City have no properly constructed "damp course" in the walls, and, in addition, have not had a thick layer of concrete laid under the bottom floors; in such cases moistening of the subsoil must lead to dampness in the dwelling, to say nothing of the deleterious ground air which will be forced upwards

by the rising of the ground-water from time to time; and always be more or less sucked into the dwelling, owing to its atmosphere being warmer.

- (j) Food store. 12.7 per cent. of the affected dwellings had food stored *in a ventilated* receptacle; 3.8 per cent. of the dwellings had *the household food stored in an unventilated receptacle* (i.e., having no communication with the external air) in some part of the house, other than the living-room; and in as many as 83.5 per cent. of the dwellings the food was stored *in some unventilated receptacle in the actual living-room*. In the preceding three years the food store was some unventilated receptacle *in the actual living-room* in (averaged) 81.4 per cent. of the affected dwellings.

It is worthy of notice that in 83.5 per cent. of the affected dwellings the food was stored in the living-room, and therefore in *an atmosphere more or less stale and impure*. Without assuming a direct connection between such food and a disease like Typhoid, it will be obvious that articles of food, such as milk, butter, bread, etc., kept in such surroundings become contaminated easily with impurities.

- (k) Nearness to sewer gratings and gullies.

					Average of three preceding years.
16.0 per cent. of the affected dwellings were					
within 20 ft.	...	...	...	...	26.0
26.0 per cent. of the affected dwellings were					
within 40 ft.	...	...	...	...	27.0

The remainder were over 40 ft. These measurements were taken because a stench from a grating or gulley has been charged with occasioning Typhoid so constantly by people living near; my own belief is *that pollution of the neighbouring air, with sewer gas, lowers the resisting powers of the body*, and thus causes those exposed to so deleterious an influence to fall more easily a victim of disease. I am of opinion that the emanations from collections of excrement in "bins" and pail-closets, and from heaps of decaying refuse, act in the like manner as powerful predisposers to disease.

(l) Occupations of householders, etc.

Caretaker, 1; boat-builder, 1; wellsinker, 1; police-officer, 1; nurse, 3; grocer, 1; labourer, 11; servant, 2; tailor's cutter, 1; coal-hawker, 2; newsboy, 1; shoemaker, 8; coach-builder, 2; paper-folder, 1; carter, 2; music teacher, 1; errand boy, 2; boot-fitter, 1; needleworker, 1; publican, 2; box-maker, 1; butcher, 1; shoe machinist, 2; waterman, 1; assistant, 2; detective, 1; hawker, 1; housekeeping, 3; typist, 1; tailoress, 1; upholsterer, 1; newsagent, 1; fireman, 1; boot-finisher, 1; inker, 1; milkseller, 1; schoolmaster, 1; labeller, 1; carpenter, 1; clicker, 1; telegraphist, 3; boxmaker, 1; laundress, 1; Post Office clerk, 1; sewage inspector, 1; baker, 1; no occupation, 2.

(m) Secondary cases.

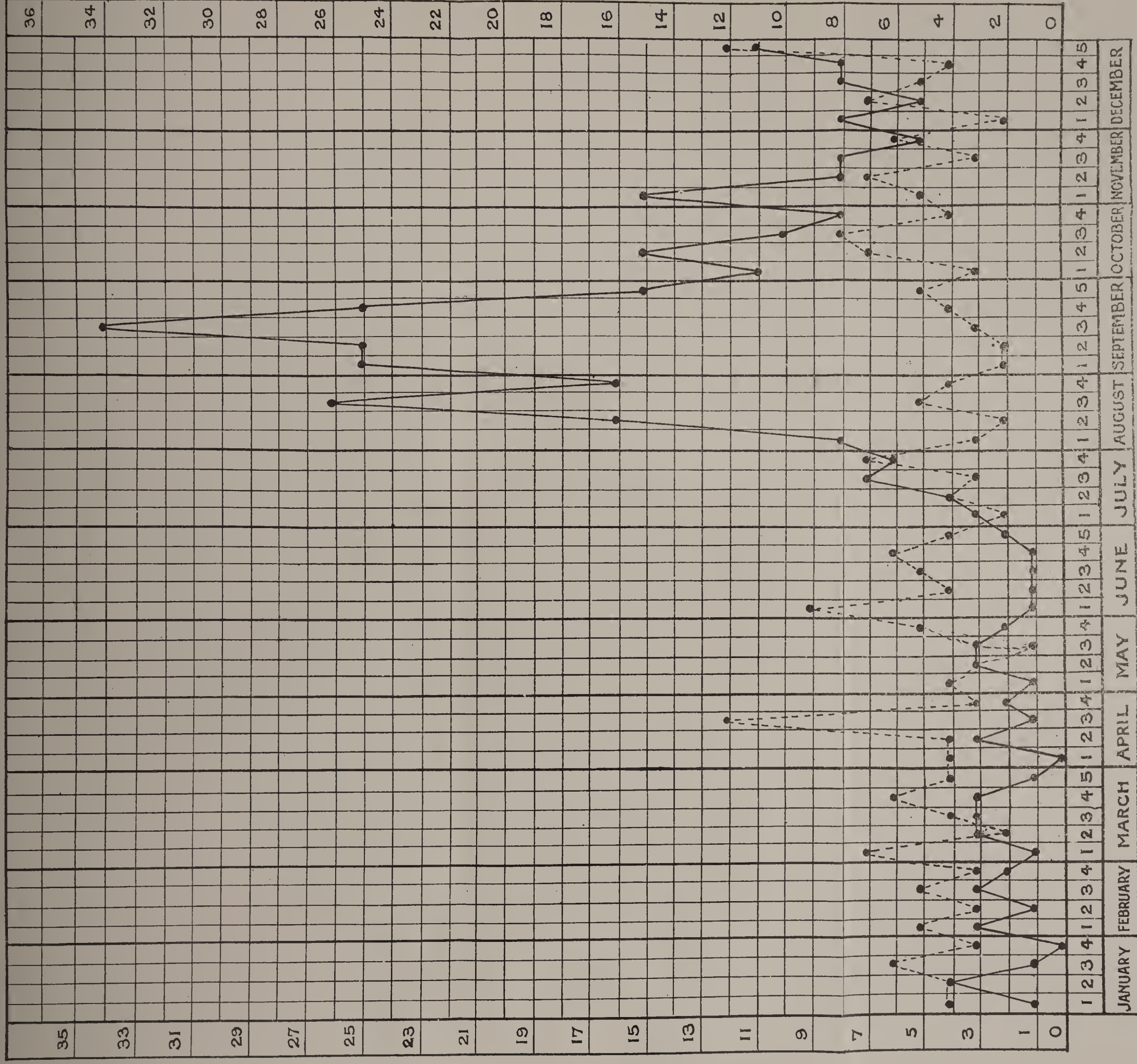
In 6 dwellings more than one member of the household contracted the disease.

Taking all the facts brought to my notice in these detailed investigations during the past years into consideration, the following summary represents the conclusions I have at present arrived at:—

- (1) That Enteric Fever (as shown by the number of notifications) has been prevalent in Norwich for the last 26 years.
- (2) That while there has been, on the whole, a seasonal increase of the disease in the autumn months, the disease has persisted throughout the year.
- (3) That what may be described as the *endemicity of the disease in the City, appears to be associated with the methods followed in the disposing of excrement* and with defects in the drainage.
- (4) That while specially polluted water and milk are occasional causes, there is no sufficient evidence that they constitute the main persisting causes.

Deaths from ZYMOTIC DISEASES, BLACK LINE •
Deaths from TUBERCULOUS DISEASES, BLACK DASHES •-----

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- (5) That bedroom crowding exerts a predisposing influence, probably by lowering the standard of healthiness in those subjected to such undesirable household conditions.
- (6) That emanations from sewer gratings, untrapped gullies, and more particularly collections of festering excrement exert a *predisposing influence in those exposed to them*.
- (7) That the existence of some thousands of fixed and movable "bins" is unquestionably a source of continuous pollution alike to the *soil* and the *air* in the neighbourhood of the dwellings, and affords *favourable conditions for fostering a filth disease like Enteric Fever*; and that, in scavenging, portions of excrement are liable to fall on to and get trodden into imperfectly paved yards, alleyways, and streets.
- (8) That the high proportion of the chlorides and nitrates to be found in the soil of the City bears testimony to *organic pollution in the past and furnishes a favouring nidus for promoting the existence of the specific micro-organism of Enteric Fever*.
- (9) That this disease can be combated most effectually by the adoption of a system of water-carriage for the disposal of excrement, having efficient drainage, paving all yards with material impervious to fluids, and by the hospital treatment of such cases as occur in small or crowded dwellings.

Puerperal Fever.—Seven notifications of this dangerous child-bed fever were sent in during the year; there were 3 fatal cases. Supposing the notifications to represent all the cases which occurred, the death-rate was not a high one, the average death-rate for the preceding three years having been 72.0 per cent. of the notified cases. Puerperal Fever being a preventible disease, we were entitled to look for a diminution in the mortality from it. I forbid the nurse or midwife in attendance to go to another confinement for a period of at

least one month, and then only after a thorough cleansing and disinfection of her clothing and person, and, as far as possible, dwelling. The Medical Practitioners in the City I have found anxious to adopt all reasonable precautions, the chief being a temporary abstention from obstetric practice. Rigorous antiseptic precautions in obstetric practice furnish the best means of preventing the development of the disease, and as our midwives have now to be registered and are trained more scientifically, we may look justifiably for a steady lessening of Puerperal Fever; more particularly as parturient women themselves come to understand the vital importance of scrupulous cleanliness being observed by themselves, their attendants, and in all the surroundings. The Midwives Act should enable us to maintain a more rigorous control over this disease, particularly after 1910, when certain of its provisions come into force.

Erysipelas.—Sixty-nine cases were notified to me. Fifteen deaths were registered from it. Last year the figures were 76 and 12 respectively. Erysipelas of a fatal type cannot, therefore, be regarded as having been prevalent in the City. As a matter of fact, I regard notifications of this disease as possessing but mitigated practical value.

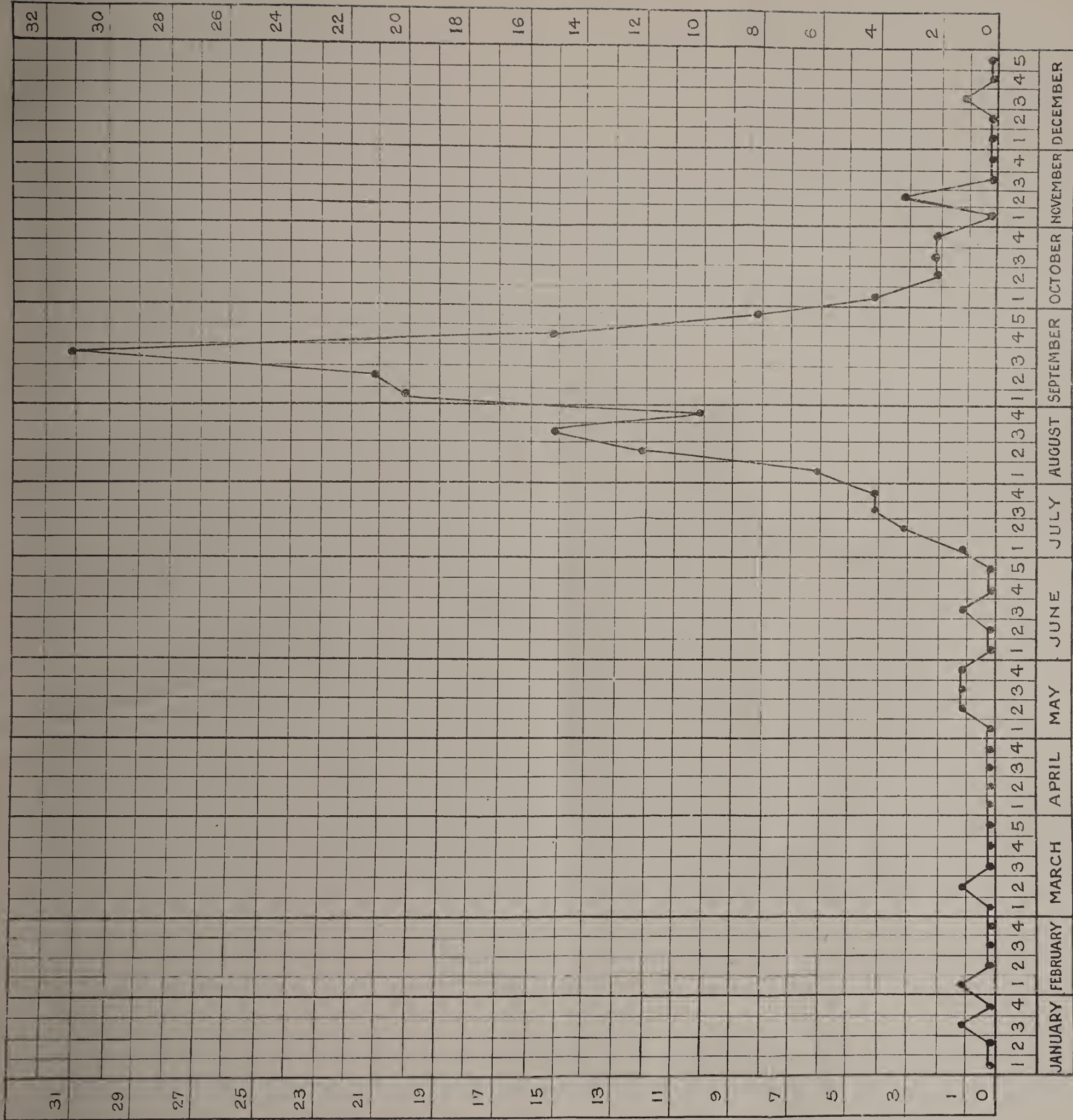
Measles.—Measles was not notified during the year, and 99 deaths were attributed to it. This is a dangerous disease, particularly on account of its liability to set up lung complications; and, on account of its lengthy incubative period and infectivity, is a source of administrative trouble to all concerned with the control and management of schools. The notification of first cases in separate dwellings is helpful in enabling the schools to exclude all children coming from an infected dwelling. As a weapon of defence against the spread of Measles *in towns* I think the closing of schools has limited value; what I found notification of most value for was the number of sanitary defects in and about the affected dwellings which were brought to our notice; and the opportunities that were afforded to bring about an alteration in the attitude of mind assumed by many of the mothers of families in Norwich towards this highly dangerous infective disease, and the criminality of carelessness in dealing with it.

Total Tenements and Tenements of less than Five Rooms, distinguishing those Occupied by Various Numbers
of Persons in the County Borough and City of Norwich and its Constituent Wards, 1901.

WARDS.	Total Tenements.	No. of Rooms in each Tenement.	NUMBER OF OCCUPANTS IN EACH TENEMENT.												No. of Tenements of less than Five Rooms.
			1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12. or more	
NORWICH, CITY OF ...	25585	1. 2. 3. 4.	231 470 197 186	98 490 440 702	12 229 365 713	10 138 245 577	4 101 178 461	4 34 123 406	... 17 97 251	... 4 35 144	... ... 30 90	... 1 9 33	... 1 4 12	... .. 1 7	359 1485 1724 3582
No. 1 or CONESFORD	1298	1. 2. 3. 4.	16 37 18 4	12 26 34 23	1 15 33 22	1 8 18 14	1 1 14 12	1 1 13 16	... 3 9 7	... ... 4 7	... ... 2 3	... ... 1 ...	... ... 1 ...	... ... ... ...	32 91 147 108
No. 2 or BER STREET	1868	1. 2. 3. 4.	12 54 21 24	8 53 31 84	1 15 46 82	1 17 19 66	... 21 22 56	... 9 11 53	... 1 14 39	... ... 5 11	... ... 5 16	... ... 1 5	... ... ... 5	... ... ... 1	22 170 175 442
No. 3 or MANCROFT...	842	1. 2. 3. 4.	7 38 19 11	2 28 31 17	... 5 21 21	... 1 15 16	... 2 10 9	... ... 3 6	... ... 7 8	... ... 1 4	... ... 3 1	... ... ... 1	... ... ... 1	... ... ... ...	9 74 110 195
No. 4 or WESTWICK	1406	1. 2. 3. 4.	50 51 17 19	12 50 38 64	1 20 29 52	1 13 17 34	... 10 14 33	2 1 12 27	... ... 10 11	... ... 6 15	... ... 1 4	... ... 1 1	... ... ... ...	... ... ... ...	66 145 145 260
No. 5 or COSLANY ...	1561	1. 2. 3. 4.	52 50 32 10	34 68 73 70	4 44 52 56	3 28 45 56	2 20 35 52	... 5 22 32	... 5 16 29	... ... 5 17	... ... 9 13	... ... 3 5	... 1 1 2	... ... 1 ...	95 221 294 342
No. 6 or FYE BRIDGE	1798	1. 2. 3. 4.	42 85 19 11	10 114 57 45	1 53 65 48	1 33 51 58	... 23 31 40	... 8 21 39	... 4 17 28	... 2 10 14	... ... 4 8	... ... 1 4	... ... 1 ...	... ... ... 1	54 322 277 296
No. 7 or THORPE ...	1408	1. 2. 3. 4.	3 20 5 5	1 8 13 25	1 14 7 18	... ... 6 30	... 2 8 21	... 1 5 15	... ... 3 7	... ... ... 7	... ... ... 2	... ... ... 1	... ... ... 1	... ... ... 2	5 45 47 134
No. 8 or LAKENHAM...	1344	1. 2. 3. 4.	3 16 11 25	... 16 20 83	... 2 18 102	... 5 15 88	... 1 9 56	... ... 5 48	... ... 3 30	... ... ... 19	... ... ... 12	... ... ... 3	... ... ... ...	... ... ... ...	3 40 82 466
No. 9 or TOWN CLOSE	1459	1. 2. 3. 4.	3 20 9 18	... 23 33 73	... 14 19 87	... 4 5 62	... 2 2 56	... ... 4 49	... ... 2 24	... ... 1 8	... ... ... 4	... ... ... 3	... ... ... 1	... ... ... 1	3 63 75 386
No. 10 or EATON ...	2469	1. 2. 3. 4.	2 12 ... 1	... 5 3 9	... ... 1 18	... 1 6 9	... ... ... 5	... ... ... 6	... ... ... 2	... ... ... 4	... ... ... ...	... ... ... 1	... ... ... ...	... ... ... ...	2 18 10 55
No. 11 or NELSON ...	1496	1. 2. 3. 4.	2 18 12 23	2 11 22 79	... 3 15 60	... 2 3 51	... 1 5 29	... 1 ... 22	... ... 1 20	... ... ... 8	... ... ... 5	... ... ... 1	... ... ... ...	... ... ... ...	4 36 59 298
No. 12 or EARLHAM...	1384	1. 2. 3. 4.	2 3 5 6	... 2 5 17	... 1 2 20	... ... 1 15	... 1 1 7	... ... ... 3	... ... ... 1	... ... ... 2	... ... ... ...	... ... ... ...	... ... ... ...	... ... ... ...	2 7 16 71
No. 13 or HEIGHAM...	1472	1. 2. 3. 4.	5 7 2 3	... 7 2 21	... 3 2 15	... 1 3 ...	... 2 ... 8	... ... ... 7	... ... ... 2	... ... ... 1	... ... ... 3	... ... ... 2	... ... ... ...	... ... ... ...	5 20 7 65
No. 14 or WENSUM ...	1568	1. 2. 3. 4.	11 24 10 15	... 32 23 38	... 14 13 46	... 9 21 31	... 6 4 35	... 2 10 32	... ... 5 13	... ... 2 12	... ... 1 9	... ... ... 4	... ... ... 1	... ... ... 1	12 87 89 237
No. 15 or CATTON ...	2195	1. 2. 3. 4.	8 13 13 10	4 21 36 44	1 7 30 51	... 4 13 29	... 1 17 32	... ... 8 41	... ... 6 19	... ... ... 10	... ... ... 6	... ... ... 1	... ... ... 1	... ... ... 1	13 49 127 245
No. 16 or MOUSEHOLD	2017	1. 2. 3. 4.	13 22 4 1	13 26 19 10	2 19 12 15	3 12 9 15	1 8 6 10	... 5 7 10	... 4 4 11	... ... 1 5	... ... ... 4	... ... ... 1	... ... ... ...	... ... ... ...	32 97 64 82

1906

DEATHS from DIARRHOEA.



Whooping Cough proved fatal to 20 children last year. This is a result for 1906 which is less satisfactory than that for the preceding year, when 13 deaths from the disease were registered. This disease is highly infectious, and dangerous too. I gain information of its prevalence among children attending the schools only from the weekly returns.

Diarrhœal Diseases carried off 186 persons, 175 of whom were *under 5 years of age*, the greater number succumbing (as is customary) in the third quarter of the year. In 1905 there were 148 deaths from these diseases. I attribute the prevalence of and mortality from these diseases to *bad feeding, carelessness in the treatment and storage of milk, soil and air pollution, particularly the retention of excrement upon the premises.*

Influenza.—22 deaths were certified to be either directly or indirectly due to this disease; in 1905 the number of deaths ascribed to it was 12.

Cancer.—131 deaths were attributed to malignant growths during the year; in 1905 the number was 125.

Septic Diseases (other than those specified) caused the deaths of 75 persons; in 1905, 64.

THE TUBERCULOUS DISEASES.

(Forms of the disease called commonly “Consumption.”) 149 deaths were certified to be due to tuberculous disease of the Lungs (Phthisis) and 94 to other forms of tuberculous infection; making in all a total of 243 *deaths from the tuberculous diseases.* This is a little above the average for the preceding thirteen years, which average amounts to 231 *deaths from the tuberculous diseases per annum.* I am hopeful that at length the people of Norwich are beginning to realise the fact that the tuberculous are catchable diseases, and to treat them accordingly. Nothing but benefit to the healthiness of our community can result from the general apprehension of the fact that the tuberculous diseases are dangerous—the phthisical type particularly. I feel that I have done well in insisting, as for twelve

years I have done, upon the dangers to the community of these *catchable and largely preventible diseases*. The chart shows the weekly fluctuations in the tuberculous death-rate throughout the year; and it will be worth the reader's while to compare this chart with the charts of the twelve preceding years. The returns for the thirteen years confirm the fact that the *tubercle bacillus* (the micro-organism of whose pernicious activity these diseases furnish us with reliable information) is no stranger among us. It flourishes practically wherever people are crowded together, and may be said to be entrenched in all old cities. This lethal bacillus, which has cost, and is still costing us, as a nation, directly or indirectly, millions of money, and goes on reaping its untimely harvests of lives year after year, is most at home in dark, ill-ventilated places, and is much favoured by overcrowding in any dwellings. *Sunlight and fresh air, fortunately, are destructive to it*; which fact helps to explain why sanitary experts claim that every dwelling shall have good *air space, and freedom for admission of sunlight into and about it*.

In 1893 I first offered to disinfect gratuitously the rooms, which had been occupied by a tuberculous patient, after the removal by death, or otherwise, of the victim of the *tubercle bacillus*; and there has been a really remarkable growth of opinion on the part of the public that *it is a wise step to have rooms, etc., disinfected after a death has occurred from tuberculous diseases*; and one can only hope that the practice will become general. I hope also that the members of the medical profession will recommend disinfection to the friends of their patients in all cases of death, or of removal. It is, at any rate, encouraging to find that, within 10 years, the relatives of more than nine-tenths of the fatal lung cases consented to have this precautionary measure adopted *for the protection of the other inmates of the dwellings*.

Again I direct attention to the fact that the *tubercle bacillus* is *coughed up* constantly in large numbers *with the spittle* of consumptive people, and that the same bacillus is present commonly in the discharges from tuberculous glands, abscesses, etc. Should hæmorrhage occur, the specific bacilli will pretty certainly be carried

out with the blood. Hence the importance of either rigidly disinfecting (boiling is a good method) or burning any rags, clothes, etc., soiled with the blood or expectoration. For if the extruded matter be left to dry, it will, in time, become fine dry dust; which dust may be kicked or brushed up into the air, and as it contains the potentially active bacilli, it may be the means of introducing these into the bodies of others; or the expectorator of the infective material may, in this way, re-infect himself. The risk of infection is specially great when the epithelium (an exquisitely delicate protective membrane) lining the respiratory passages becomes from any cause abraded (as, for example, after an attack of Bronchitis, Whooping Cough, Measles, Influenza, etc.) It is not only a piece of enlightened self-interest on the part of a consumptive to take care that all expectorated matter is disinfected rigidly, or, what is better, burnt promptly, but it is also his imperative duty to minimise the risk to his fellows by so doing. It is *what a consumptive coughs up* that is to be feared: not his mere breath—one may sit, for example, in the same room with him, if it be well ventilated, and his habits are cleanly, without practical risk. Spitting about in public places and vehicles becomes, when the spitter is a consumptive, in addition to being a disgusting habit, a dangerous one as well; a habit that should be discouraged rigorously, alike in the interests of decent manners and of the general health. A consumptive can always carry a damp rag with him, which rag he can burn easily.

Unfortunately, a very large number of people inherit a predisposition, that is a heightened liability to fall victims to tuberculous disease, and many others favour the development of the disease in themselves, through lowering their general tone by living amid surroundings of a depressing character, such as *ill-lighted, dusty, and badly-ventilated* shops, work-rooms, houses, and offices. A person enjoying fairly good health may, and probably does, take in tubercle bacilli from time to time with his food and air; but commonly the resisting power of his tissues is able successfully to cope with the invaders; the person, however, whose health is below par, and whose tissue-resistance is enfeebled, such an one all too frequently succumbs—and the onset is so insidious that the bacilli may gain a firm hold

before the mischief is noted. The great general preventatives of consumption are *good food, sunlight, and fresh unbreathed air.*

When a member of a household has fallen a victim to one or other of the tuberculous diseases, it is not necessary to treat him as a social leper. If precautions be taken to prevent *anything he coughs up* from ever drying, and if the rooms occupied be ventilated effectively, he may share the ordinary family life. He should, however, sleep in a bed by himself, and, where practicable, *in a separate room*; this room should be as large as possible, and the consumptive should early acquire the habit of *keeping the window always OPEN*, supposing, as is commonly the case, there is no other means of admitting fresh air. Of course, the proper way of securing adequate ventilation is to make arrangement *altogether unconnected with the window*; perhaps the simplest, and certainly one of the best means of doing this, is to insert a grating *at the floor level* in the external wall, delivering, if possible, *fresh air under the bed* (by means of a simple valve the incoming air can be directed upwards to the bottom of the bed); the atmosphere of the room will then always keep refreshing and healthsome, whether the window be closed or not. If such fresh air grating be *not* provided (the expense of inserting one is trifling), then if the window-frame reach low down, say to within eighteen inches of the floor, let it be kept open *at the bottom*; if the lower edge of the window be, as it most stupidly usually is, about three or four feet from the floor, place an accurately-fitting piece of board under the lower sash, so as to leave a vertical aperture between the sashes of not less than three inches in depth. Failing all these, open the window *at the top*. In towns the air may be rendered more acceptable to the irritated lung tissues by causing it to pass through a screen of stretched flannel, which will filter out effectually from the air particles of dust, "blacks," etc. *Under no circumstances is it prudent to turn the room into a practically closed box.* Let the bed clothing be warm and light, *e.g., ventilated* eiderdown quilts. With good air, cold never need be feared. I do not believe that moisture is detrimental to a consumptive, but I believe that the lowered barometric pressure which usually accompanies it is, by leading to the engorgement and

relative congestion of the superficial vessels. The important point is to keep a consumptive irrigated constantly *with unbreathed air*. It is when the bacillus-riddled victim of tuberculous disease becomes too weak to attend to himself carefully that the great risk of infecting his bedding, etc., and room occurs, and hence the sensibleness of having these carefully disinfected, after pale Death have entered with equal foot, whether it be into the hovels of the lowly or the halls of the great.

It is believed that tuberculous disease may be conveyed to the human by other animals, notably, by cattle. Dairy cows, in particular if kept in over-crowded and badly ventilated sheds, fall ready victims to tuberculous disease and, through their milk, may convey it to milk-feeding people, particularly children. This danger, in a great measure, may be guarded against by, *in all cases, boiling or otherwise thoroughly cooking suspected milk* before consuming it. There is a lessened but still sensible risk in eating the flesh of tuberculous cattle, for the risk cannot be entirely banished by cooking, the interior portion of joints, etc., rarely reaching a temperature sufficiently high to kill the bacilli.

It should be the duty of specially-appointed veterinary surgeons *to make periodical inspections of all dairy cattle*—to order their destruction when desirable (fair compensation to be given in all cases where the owner has taken reasonable care to give no encouragement to the disease), and to supervise the disinfecting of the stalls, sheds, etc., which have been occupied by the affected animals. But one fears that these simple precautions will only be adopted when the electors of this Realm of England have realised “that public health is public wealth,” and make the promotion of national healthiness “the supreme law.”

The following is a copy of the card of instructions issued by me to people known to be suffering from Tuberculous Disease :—

PRECAUTIONS FOR CONSUMPTIVE PERSONS.

Consumption is a catchable disease. It can be caught through infected spittle which has been allowed to become dry and then float about the rooms as dust.

Do not spit except into special vessels, the contents of which are to be destroyed by burning before they become dry. If this simple precaution be taken, there is practically no danger of infection.

The breath of consumptive persons is not directly infectious.

The following suggestions will be found useful, both to a sufferer and to his friends :—

1.—Spittle (indoors) should be received into small paper bags or pieces of paper, which should be afterwards *burned*.

2.—Spittle out of doors should be received into a suitable bottle, which afterwards should be washed out with *boiling water*; or into a small paper handkerchief, which afterwards should be burnt.

3.—If ordinary handkerchiefs are ever used to spit into they should be *put into boiling water before they have time to become dry*; or into a solution of a disinfectant, as directed by the doctor.

4.—*Wet* cleansing of rooms, particularly bedrooms occupied by *sick* persons, should be substituted for “dusting” and “sweeping.”

5.—*Sunlight*, good food, and *fresh air* are the best general remedies for the disease. Every patient should, if possible, sleep in a bedroom by himself and should sleep with his bedroom window

open, a screen being arranged, if necessary, to prevent direct draught; stretched coarse flannel may be used to free incoming town air from dust, smuts, etc. The patient need not fear going out of doors in any weather if clad warmly:

N.B.—The patient *himself* is the *greatest gainer* by the above precautions, as his recovery is retarded and frequently prevented by renewed infection derived from his own expectoration.

6.—Persons in good health have no reason unduly to fear the infection of consumption. *Over-fatigue, intemperance, bad air, dusty occupations and ill-ventilated and badly (sun) lighted rooms* favour it.



REPORT

OF THE

CHIEF SANITARY INSPECTOR.

HEALTH DEPARTMENT,
MUNICIPAL BUILDINGS,
NORWICH, 1907.

TO THE MEDICAL-OFFICER OF HEALTH.

DEAR SIR,

The following is a synopsis of the principal work carried out during the year ending December 31, 1906.

In order that comparisons and references may be easily made, I have, so far as possible, followed up the form of report adopted during the past years.

- 5,834 Nuisances detected.
- 640 Notices served by order of the Health Committee.
- 1,555 Preliminary Notices served.
- 18,227 Premises re-inspected.
- 2,157 Nuisances have been abated.
- 5,736 Special complaints have been received and the premises inspected.
- 883 Letters sent in order to obtain the abatement of nuisances.
- 134 References to the City Engineer.
- 175 References to the Water Works Company.

The following are the principal matters that have been dealt with :—

980	Orders served to provide efficient closets.
883	„ „ repair defectively paved yards.
418	„ „ provide efficient privy pans and dust receptacles.
428	„ „ cleanse and unstop yard drains.
463	„ „ repair or disconnect rain-water pipes.
82	„ „ remove and cease to keep animals.
274	„ „ efficiently trap yard drains with gullies.
152	„ „ repair defective water closets.
68	„ „ cleanse dirty houses.
57	„ „ remove foul accumulations.
79	„ „ repair defective eaves gutters.
131	„ „ repair defective house roofs, floors, etc.
46	„ „ abate overcrowding.
58	„ „ disconnect sink waste pipes over gullies.
22	„ „ empty and cleanse foul cesspools.

PRIVY CONVERSIONS.

Private owners continue to convert privies into water closets without notice from the Corporation. During the past year 149 privies have been so converted.

INFECTIOUS DISEASES.

1,894 visits have been paid to infected premises.

1,427 rooms have been disinfected upon the removal or recovery of the patient.

Liquid and powder carbolic disinfectants have, as in former years, been given to the householders gratuitously in all cases of infectious disease, and for disinfecting purposes generally.

HOUSE-TO-HOUSE INSPECTION.

784 Houses and premises have been visited.

YARD AND COURT INSPECTION.

7,383 Visits have been paid to Yards and Courts.

The privies and yards found dirty were cleansed at the request of the Inspectors. Other sanitary defects found are dealt with under the term "Nuisances," in a preceding column.

SLAUGHTER-HOUSES.

2,300 Visits have been paid to slaughter-houses.

It was found necessary to caution several occupiers of slaughter-houses respecting the dirty condition of the walls and floors, and the non-removal of refuse in accordance with the Slaughter-House Bye-laws.

MARKETS.

The Fishmarket has been visited and inspected daily, and the Vegetable, Fruit, and Provision Markets on Market Days.

The Inspectors on duty every Saturday evening for the purpose of inspecting the meat, poultry, fish, etc., exposed for sale in the Provision Market, and for examining articles of food exposed for sale in the poorer parts of the City, have on several occasions found it necessary to deal with various articles of food which were in a condition unfit for the food of man, and such articles have been included in the undermentioned list of unsound food.

UNSOUND FOOD.

The following have been destroyed as being unfit for human food, with the consent of the owners :—

- 3 Carcases of Veal.
- 1 Carcase of Beef.
- 5 Carcases of Mutton.
- 3 Carcases of Pork.
- 1 Hind Quarter of Beef.
- 3 Fore Quarters of Beef.
- 14 Ox Livers.
- 4 Sets of Ox Lungs.
- 2 Pig's Plucks.

9	Peds of Shrimps.
6	Boxes of Shrimps.
2	Barrels of Shrimps.
30	Bags of Shrimps.
6	Tubs of Shrimps.
4	Flats of Shrimps.
2	Baskets of Shrimps.
22	Bags of Cockles.
60	Boxes of Haddocks.
1	Ox Skirts.
1	Half-tin Lobster.
1	Box Roes.
6	Boxes of Kippers.
37	Rabbits.
2	Peds of Bloaters.
2	Bags of Whelks.
8	Bags of Mussels.
1	Peck of Mussels.
4½	Bags of Winkles.
1	Barrel of Scollops.
1	Box of Milches and Roes.
4	Boxes of Sprats.

PROCEEDINGS UNDER THE SALE OF FOOD AND DRUGS ACTS.

The number of samples purchased and submitted for analysis during the year was 248.

In 21 cases proceedings were taken against vendors of adulterated milk :—

In 19 of the above cases the magistrates convicted and imposed fines varying from 5s., without costs, to £10 and 7s. costs.

Two cases were dismissed.

In 24 cases the vendors were written to and cautioned, 21 for Milk, 2 for Icecream, and 1 for Cream.

56 Samples of Milk were taken on Sundays.

Particulars of the prosecutions are given below :—

No.	Date.	Adulteration.	Article.	Fine.
	1906.			
375	March 9th	17 per cent. fat deficient	Milk	£3 and 7s. costs
385	April 10th	28 „ added water	„	£2 10s. and 7s. costs
392	„ „	8½ „ „ „	„	£2 10s. „ 7s. „
390	„ 11th	61½ „ „ „	„	£10 „ 7s. „
386	„ „	25½ „ „ „	„	£3 „ 7s. „
435	May 17th	21 „ „ „	„	Dismissed
469	June 7th	26 „ fat deficient	„	5s. without costs
494	July 7th	5½ „ added water	„	10s. and 7s. costs
509	„ „	18 „ fat deficient	„	10s. „ 7s. „
512	„ „	10 „ „ „	„	20s. „ 7s. „
502	„ „	15 „ „ „	„	10s. including costs
517	August 14th	10 „ „ „	„	10s. and 7s. costs
524	„ „	9 „ „ „	„	Dismissed
560	October 3rd	10 „ added water	„	20s. and 7s. costs
559	„ 4th	7½ „ „ „	„	20s. „ 7s. „
548	„ „	65 „ fat deficient	„	£2 „ 7s. „
546	„ „	17 „ „ „	„	20s. „ 7s. „
563	„ 3rd & 5th	9¾ „ added water	„	5s. without costs
584	Nov. 7th	18 „ fat deficient	„	£2 10s. and 7s. costs
568	„ „	9 „ „ „	„	20s. and 7s. costs
612	Dec. 12th	15 „ „ „	„	30s. „ 7s. „

On August 14 a milk seller was fined 10s. and 7s. costs for refusing to supply the Assistant Inspector.

WATER ANALYSIS.

13 Samples of Water have been taken from pumps and draw wells,

3 Samples were certified to be "unfit for drinking purposes," and injurious to health.

10 Samples were certified "Passable."

The property where samples were certified to be "unfit for drinking purposes" have been provided with the Water Works Company's Water.

INSUFFICIENT WATER SUPPLY.

In 21 cases notices have been served on owners to provide their premises with a proper supply of water.

COWSHEDS, DAIRIES, AND MILKSHOPS.

262 Visits have been paid to Cowsheds, and

462 to Milkshops and Dairies.

The Cowsheds, etc., have been limewashed at the request of the Inspectors.

COMMON LODGING-HOUSES.

The Common Lodging-Houses have been visited weekly, and were found to be conducted in a fairly satisfactory manner.

HOUSES LET IN LODGINGS.

333 Visits have been paid to houses let in lodgings, and many rooms were limewashed at the request of the Inspectors.

MEETINGS OF OWNERS.

450 Meetings of owners have been held.

OFFENSIVE TRADES.

114 Inspections have been made of premises where offensive trades are carried on.

SMOKE OBSERVATIONS.

338 Smoke Observations have been taken.

It has been necessary to caution several manufacturers and firemen, and recommend the use of a better class of coal and the exercise of greater care in firing.

PIGGERIES.

306 Visits have been paid to Piggeries, many of which have been cleansed at the request of the Inspectors.

BAKEHOUSE INSPECTION.

Number of Bakehouses on Register, 182.

Visits paid to Bakehouses, 322.

MARGARINE ACT.

346 Inspections have been made of premises to see if Margarine was sold, and where such was the case to see that the requirements of the Margarine Act were carried out.

FACTORIES AND WORKSHOPS.

Total number of Workshops in the City, 571.

Number of New Workshops inspected, 115.

Total number of Factories in the City, 330.

Number of Outworkers Premises visited by Male Inspectors, 765.

The undermentioned are the insanitary conditions that have been dealt with at the above class of premises:—

- 40 Water Closets have been provided.
- 287 Workshops and Workrooms have been cleansed and lime-washed.
- 20 Workshops Drains have been reconstructed.
- 1 Workshop Floor and Staircase has been repaired.
- 1 Foul Urinal has been abolished.
- 1 Urinal has been provided.
- 1 Case of Overcrowding has been dealt with.

SCAVENGING.

During the year, 12,491 Loads of Privy Bin Refuse were removed by the Night Waggon, and 17,090 Loads of House Refuse by the Dust Waggon in the daytime.

7,627 Loads of Refuse were destroyed at the New Mills Dépôt.

I am, Dear Sir,

Yours obediently,

JOSEPH BROOKS,

Chief Sanitary Inspector.

